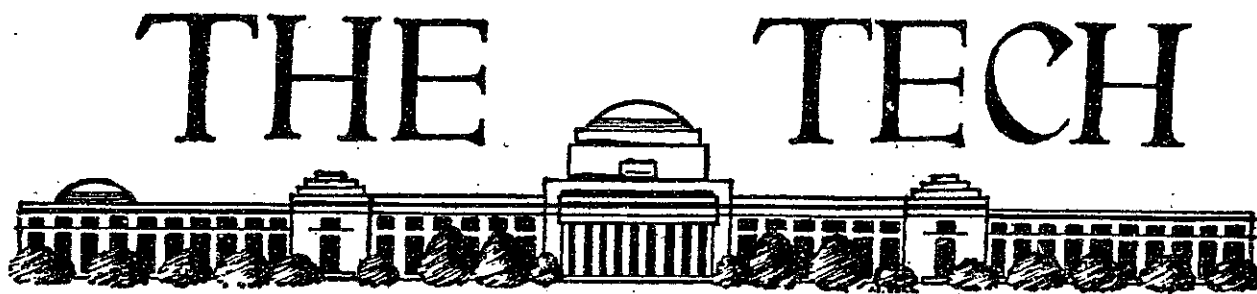


Coryell To Address RADP On Proposed 'Walk To Washington'

Professor Charles Coryell will speak this evening concerning the proposed student-faculty Walk in Washington demonstration scheduled for February 16 and 17 at a meeting of the MIT Student Organization for a Rational Approach to Disarmament.

The meeting will be held in the Hayden Library Lounge at 8:00 p. m. RADP will also show a movie entitled "March to Aldermoston" and provide full information to all interested persons regarding the Walk in Washington.

Coryell, Professor of Chemistry, also spoke last week at a meeting of the MIT Student Chapter of the American Chemical Society on "Fallout, Shelters, and Nuclear War." He is one of the 61 Tech professors who signed an open letter to President Kennedy in November protesting a massive fallout shelter program.



Established At MIT In 1881

Vol. 81, No. 29

Cambridge, Mass., Wednesday, January 17, 1962

5 Cents

Revised Student Union Plans To Be Presented At Inscomm Session

Professor Eduardo Catalano of the Department of Architecture will present the revised plans for the Student Union at the next meeting of the Institute Committee. The new plans will incorporate some of the latest suggestions which have been brought forward.

Also to be discussed at the next meeting are the question of Academic Ethics, and the present relationship between the student government and student business activities.

Unfair To Industry?

NASA Contract Creates Furor Over Lack Of Competitive Bidding

The awarding of a National Aeronautics and Space Administration contract to the MIT Instrumentation Laboratory has caused a furor in aviation circles as reported in an Aviation Week story of Jan. 8. The contract is for the development of the navigational system of the Apollo space craft, and according to Laboratory Director Stark Draper, could eventually reach a total amount of \$30-40

million over the next 10 years.

The bitterness voiced by manufacturing interests was based on three points, according to the magazine's story. Industry was concerned because the contract had been awarded without competitive bidding; it was given to a non-profit organization when industry was perfectly capable of carrying out the project; and the manufacturers claimed they had been led to believe by NASA that they would be able to bid, and thus had spent large sums on proposals.

The controversy is a major instance in MIT's growing difficulty in maintaining its neutral ground respecting industry and its own status as a prime government contractor. In the past, certain MIT people have taken note of the reluctance of private industry to come to them with consulting problems, when they may find themselves in direct competition with MIT laboratories for government work.

The award to MIT prompted a letter from Representative Steven B. Derouin, Republican of New York, to President Kennedy saying: "I trust that you will have an investigation made of this economically unsound decision of NASA so that it will not be repeated in the future. There is no justification nor any sense of fair play in having outstanding companies spend their own monies in developing a concept and then having the door uncere- moniously closed on them..."

One company spokesman is quoted as saying that the contract went to MIT in a "summit powerplay." NASA's Apollo guidance chief, Commander H. E. Van Ness, was approached by Aviation Week to justify the MIT award. Van Ness is quoted as saying that "... the Instrumentation Laboratory and Dr. C. Stark Draper, its director, are acknowledged leaders in the field and on the Polaris program, have demonstrated their ability to meet difficult objectives and adhere to a tight schedule."

The awarding of the contract has also brought to light latent industry fears about the MIT Laboratory in general. The industrial firms are afraid that if MIT becomes the sole source of NASA inertial guidance development, they will lose all their best scientists and engineers to the Institute. There has also been considerable difference of opinion between industry and Draper over the best form of guidance system. The magazine reports that much of the conflict has been muffled over fears that the actual construction contracts will not go to companies which have had disagreements with Draper.

The Tech Directors Choose New Board; Brydges Is Chairman

At a meeting last Saturday in the offices of *The Tech*, the Board of Directors elected their successors for Volume Eighty-Two. The Board is pleased to announce the following appointments:

The new chairman, succeeding Charles Muntz, will be Thomas Brydges of East Campus and Springfield, Illinois. Mr. Brydges was Managing Editor of Volume Eighty-One.

The Managing Editor, succeeding Mr. Brydges, will be Joseph Hanlon of Beacon Street and Lawrenceville, New Jersey. Mr. Hanlon has been Associate Managing Editor.

The Business Manager, succeeding Peter Thurston, will be Joseph Kirk of Sigma Alpha Epsilon and Wellesley Hills, Massachusetts. Mr. Kirk has been a member of the Business Board.

The Editor, succeeding Carl Wunsch, will be Allen Womack of Senior House and Melbourne, Florida. Mr. Womack has been Associate Editor.

The Acting News Editor will be Roger Weissinger of Phi Gamma Delta and Plattsburgh, New York. Mr. Weissinger remains in the position he has fulfilled the past term.

The Sports Editor, succeeding Thomas Sheahan, will be John W. Salmon of Phi Gamma Delta and Kansas City, Missouri. Mr. Salmon has been Associate Sports Editor.

The position of Features Editor, newly placed on the Board of Directors, will continue to be filled by Tobias Zidle of Burton House and Haverhill, Massachusetts.

The Board of Directors of Volume Eighty-Two will be installed at the annual staff banquet this week.

Reserve Book Room Hours Extended For Reading, Exam Period

The Reserve Book Room hours will be extended during the reading and examination period, and over the Intercession.

Hours for the reading period will be:

Wed.-Thur., Jan. 17-18 to 3 a.m.

Fri., Jan. 19, to 10:45 p.m.

Sat., Jan. 20, to 6 p.m.

Sun.-Thur., Jan. 21-25, to 3 a.m.

Between terms, the General and Humanities and the Science Libraries will operate on their regular schedules, while the other libraries will open:

Fri., Jan. 26, 9-5.

Sat.-Sun., Jan. 27-28, closed.

Mon.-Fri., Jan. 29-Feb. 2, 9-5.

Sat.-Sun., Feb. 3-4, closed.

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Australian Astronomer Speaks On Radio Telescopes

Dr. E. G. Bowen, Chief of the Division of Radio Physics of Australia's Commonwealth Scientific and Industrial Research Organization and one of the world's leading radio astronomers, spoke at the MIT Kresge Auditorium last night. His subject was "Radio Telescopes," a new class of large scientific instruments that enable astronomers to probe the universe even beyond the range of the biggest optical telescopes.

This was the fifth in a series of lectures on "The Age of Electronics," sponsored by the

MIT Lincoln Laboratory to commemorate its tenth anniversary.

As early as 1935, Dr. Bowen was a member of the British team under Sir Robert Watson Watt that carried out the pioneering development of radar, the radio detection technique that contributed so much to winning World War II.

During the war, he was a member of the Tizard Mission to the United States, sharing British secrets with this country. He was also a staff member at the MIT Radiation Lab-

oratory, key center of radar development in the United States. He holds the Order of the British Empire and the U. S. Medal for Freedom.

Since 1946, Dr. Bowen's pioneering work in radio astronomy has contributed greatly to the rapid advance of this new science and to Australia's leadership in the field. His division has recently built one of the largest and most refined radio telescopes in the world, a giant 210-foot dish located in New South Wales.

Ernst Creates 'Robot' Hand From Remote-Control Unit Hand, Computer Provide Tactile Sense

A computer-controlled mechanical hand that, among other things, manipulates wooden blocks very much in the manner of a young child has been developed by a graduate student at MIT.

The hand explores its environment by a sense of touch. With the computer, it forms possibly the first artificial creature that can deal with the outside world and have a limited understanding of it.

The hand-computer system can find a block, determine its size, pick it up and place it on top of another block. It can continue and make a pile of blocks. It can also locate a box, explore and determine that it is a box, then find blocks and put them in the box. Although blocks are a good toy for the hand, it can handle any object.

The mechanism was developed by Dr. Heinrich A. Ernst, a student from Switzerland, as part of a basic study in artificial intelligence. Although such computer-operated hands might have practical applications in industry, Dr. Ernst believes their likeliest use may be as robots for space exploration.

The purpose of artificial intelligence studies, Dr. Ernst explained, is to attempt to find mechanical means for solving problems that seem to require human intelligence and, in the process, to gain understanding of human behavior. Most of the research in this field has been done with computers, on such complicated problems as chess playing.

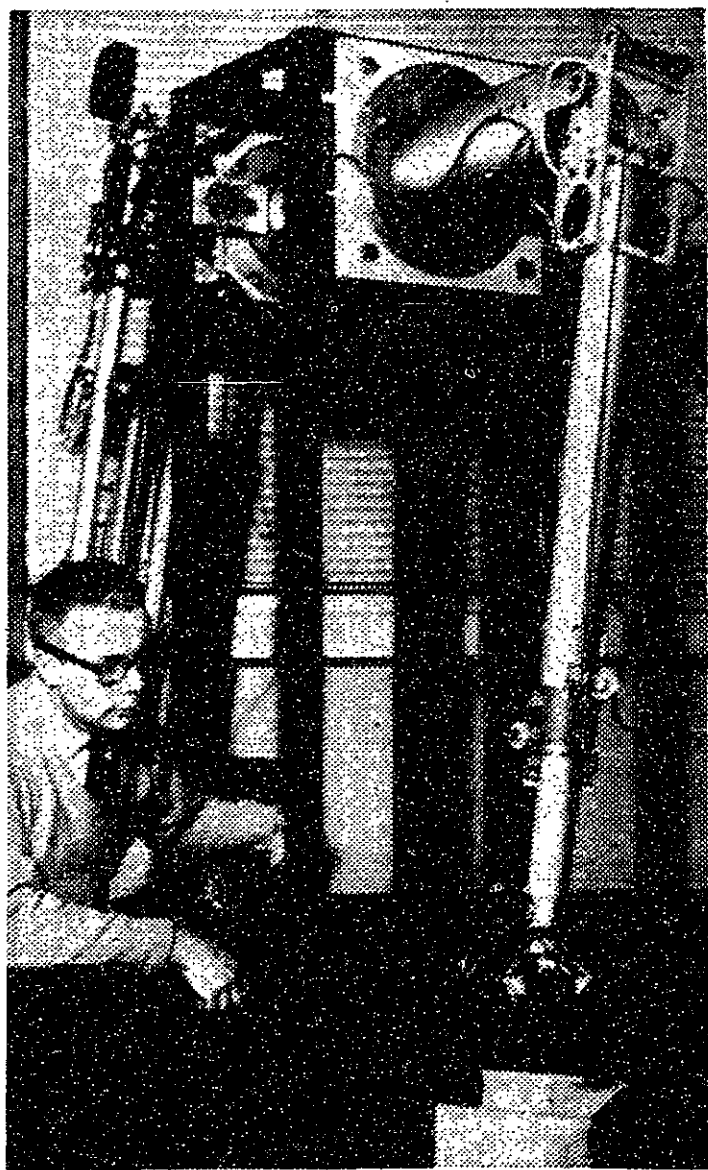
The mechanical hand and arm adapted by Dr. Ernst was an off-the-shelf commercial device of the type that is operated manually for remote handling of radioactive materials. Dr. Ernst, who did the design of the equipment, mechanical assembly and the electronics work, equipped the hand with 30 sense organs, of which some are "kinesthetic" and determine the position of the hand and some react to pressure. The hand and its control unit were connected to MIT's TX-0 computer to form the complete system.

In searching for an object, the hand gropes hesitatingly like a person in the dark, carefully exploring all of the area in front of it and always remaining a half-inch above the surface, so as not to miss an object. When it brushes against a block, it moves around the block, touching it to learn its size and location, then in the block-piling task—moves off to find another block and put it on top of the first.

If a human places a block in the mechanical hand during one searching movement, the hand seizes the block—much as a human in-

fant would do—and moves off with it instead of continuing the search.

Dr. Ernst, 28, was born in Zurich, the son of Alfred and Marthe Ernst, both professors of biology at the University of Zurich. He was graduated from the Swiss Federal Institute of Technology, then came to MIT to pursue his interest in computer applications. He received a master's degree in electrical engineering from MIT in 1959. The development of the computer-operated hand comprised his doctoral work, which was done under the supervision of Dr. Claude Shannon, Donner Professor of Science and one of the principal authors of modern information theory.



Computer-controlled mechanical hand developed at the Massachusetts Institute of Technology has found and picked up a wooden block and prepares to drop it into a cardboard box. Putting blocks in the box is one of several tasks the artificial "animal" carries out automatically.

WTBS Off Air Until New Term

WTBS will feature a special program tonight, "Night Fowl," beginning at nine, where they will stay on the air as long as record requests are called in to them. After this special end of the term program, they will sign off until February 5 because of the examination period.

Also featured tonight will be a broadcast of Oxford University Professor Sir Ronald Syme's lecture on "Roman Political Thinking," which was taped in Kresge Auditorium on December 14. This is the last of a series of special programs for this term, which included a broadcast of the Lincoln Lecture last night, and Professor Syme's first speech, which was broadcast Monday night.

CALENDAR of EVENTS

*Open to the public.

Wednesday, January 17

ELECTRONIC SYSTEMS LABORATORY.*
Seminar: "Tolerance Problem in Threshold Logic." Professor Eiichi Goto, Room 26-222, 3:00 p.m.
MIT HILLEL SOCIETY.
Study group: "Toward a Social Philosophy." 317 Memorial Drive, 3:00 p.m.
DEPARTMENT OF NUCLEAR ENGINEERING.
Seminar lecture: "Equivalent Diffusion

PLACEMENT INTERVIEWS

February 6

ACF Industries (2-B, M); Raytheon (2, 6, 8); Sperry Gyroscope (6, 8); Sperry Microwave Electronics (6, 8); Central Intelligence Agency (2, 3, 6, 8, 10, 12, 14, 15, 16, 18, 19, 21, 22); Lincoln Electric (2, 3, 6, 10-B, M).

February 7

Raytheon (2, 6, 8); Sperry Gyroscope (6, 8); Sperry Microwave Electronics (6, 8); Central Intelligence Agency (2, 3, 6, 8, 10, 12, 14, 15, 16, 18, 19, 21, 22); Avco (2, 3, 5, 6, 8, 16, 18); Bell Aerospace Systems (1, 2, 6, 8, 10, 16, 18); Bell Telephone Laboratories (all engineering, physical sciences, 18); Sandia Corporation (2, 6, 16; 8, 18-D); Continental Can (2, 6, 15-B); Hooker Chemical (1; 2, 10-B, M); Perkin-Elmer (2, 6, 8); Sikorsky Aircraft (2, 6, 10, 16, 18); U.S. Rubber (2, 5, 6, 8, 10, 15-B, M); Xerox Corporation (2, 6, 8); National Aeronautics and Space Administration (2, 3, 5, 6, 8, 10, 18, 22); Kordite Company (2, 5, 10, 15-B, M).

February 8

Bell Aerosystems Company (1, 2, 6, 8, 10, 16, 18); Bell Telephone Laboratories (all engineering, physical sciences, 18); Sandia Corporation (2, 6, 16; 8, 18-D); Western Electric (1, 2, 3, 6, 8, 10, 15, 21); Bell Operating Companies (1, 2, 6, 8, 15, 18, 21); National Aeronautics and Space Administration (2, 3, 5, 6, 8, 10, 18, 22); Alco Products (2, 3, 6, 8, 22-B, M); American Can (14, 15-B, M); Associated Spring Corporation (2-B); California Texas Oil (2, 6, 10-B, M); Cleveland Electric Illuminating Co. (1, 2, 6, 15-B, M); Cleveite Transistor (2, 3, 6, 8, 10-B, M); General Aniline & Film Corp. (5, 10-B, M); FMC Corp. (5, 10); Leeds & Northrup Co. (2, 3, 6, 8, 10); Mechanical Handling Systems, Inc. (2-B); Minnesota Mining and Manufacturing (2, 6, 10, 15-B); McDonnell Aircraft (1, 2, 3, 6, 8, 10, 15, 16, 18).

February 9

Minnesota Mining and Manufacturing (2, 6, 10, 15-B); Airsearch Manufacturing (2, 6, 8).

Coefficients for Lattices." Dr. D. S. Selengut, Manager, Advanced Reactor Physics, Knolls Atomic Power Laboratory. All interested persons are welcome. Room 222, 138 Albany St., 4:00 p.m.
DEPARTMENT OF ELECTRICAL ENGINEERING.*
Film: "Underwater Archeology in Israel." Edwin A. Flink, Binghamton, N.Y. Admission free. Room 26-100, 5:00 p.m.
MIT SCIENCE FICTION SOCIETY.*
Science Fiction Movie: "Forbidden Planet." Admission 30c. Kresge Auditorium, 6:00 & 9:00 p.m.
MIT HILLEL SOCIETY.*
Israeli Dancing. Admission 50c. Walker Memorial, Room 201, 8:30 p.m.

Thursday, January 18

Reading Period—January 18 through January 20

ORGAN RECITAL*

Noonday organ recital. Victor Matfield, MIT Organist. Admission free. Kresge Auditorium, 12:15 p.m.

MIT HILLEL SOCIETY.

Study group: "Basic Concepts of Judaism." 317 Memorial Drive, 4:00 p.m.

DEPARTMENT OF PHYSICS.

Colloquium: "Electron Scattering Studies of Nuclear Structure." Professor Henry W. Kendall, MIT. Tea in the John Picker Koller Room (26-414) at 3:30 p.m. Room 26-100, 4:00 p.m.

DEPARTMENT OF MATHEMATICS.*

Brandeis-Harvard-MIT Mathematics Colloquium. Tea in the Common Room at 4:00 p.m.

2 Divinity Avenue, Harvard University, 4:30 p.m.

WATER POLO CLUB.*

Meeting. Alumni Pool, 6:30 p.m.

LECTURE SERIES COMMITTEE.*
Lecture Series Committee Free Movie. "The Days of Thrills and Laughter." Kresge Auditorium, 7:00 and 9:00 p.m.

MIT STUDENT ORGANIZATION FOR A RATIONAL APPROACH TO DISARMAMENT AND PEACE.

Open meeting. Speaker, Professor Charles Coryell, MIT. Vannevar Busch Room, 8 p.m.

Sunday, January 21

PROTESTANT CHRISTIAN ASSOCIATION.
Breakfast for Protestant Students. West Dining Room, Graduate House, 10:00 a.m.

ORGAN RECITAL.*
Organ recital by Verle Larson, Christ Episcopal Church, Baltimore, Md. Admission free. MIT Chapel, 4:00 p.m.

Monday, January 22

Examination Period—January 22 through January 26

Monday, February 5

Registration for Second Term.

Exhibits*

FACULTY CLUB.
Prints by Patricia de Gogorza. Early New England pottery collected by Professor F. H. Norton.

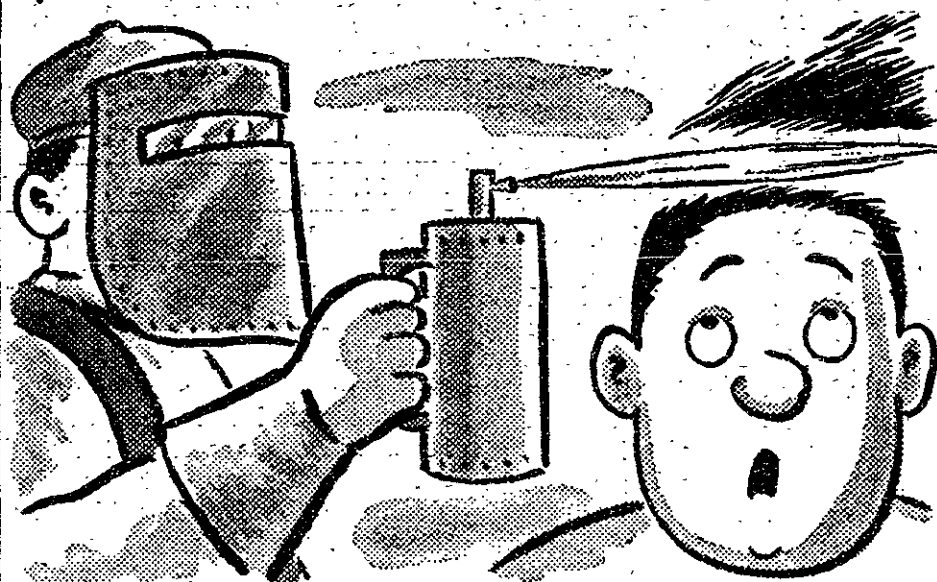
MIT on WGBH-TV, Channel 2

MIT SCIENCE REPORTER.

"Radio Telescopes." Host: John Fitch; Guest: Dr. Edward G. Bowen, The Commonwealth Scientific and Industrial Research Organization, Sydney, Australia. Wednesday, January 17, 9:30 p.m. and Sunday, January 22, 6:30 p.m.

DOING IT THE HARD WAY by hoff

(GETTING RID OF DANDRUFF, THAT IS!)

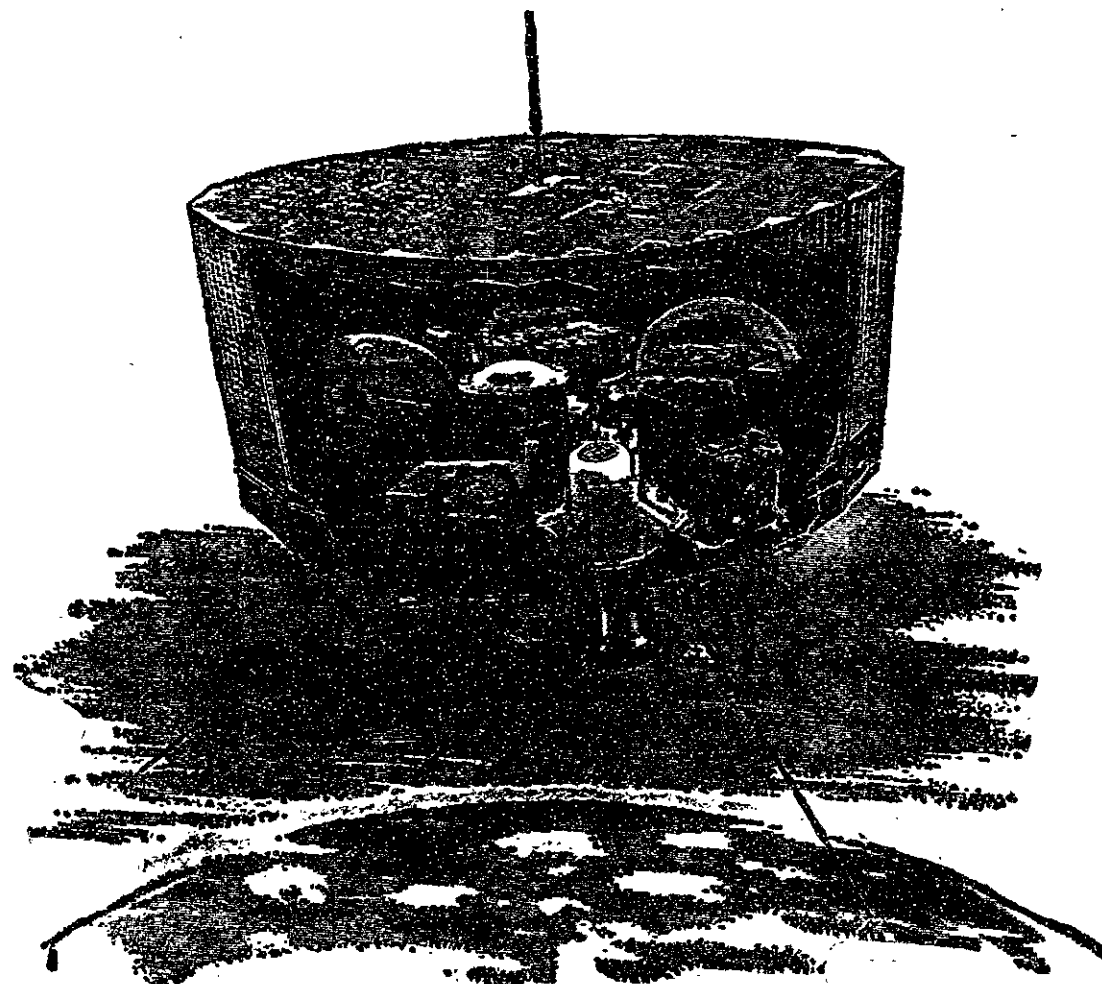


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Workmen revamp interior of Cenco Building, which will house the Psychology Department when work is completed. — Photo by Conrad Grundelner

Scanning Critical To Vision

By Tom Sheahan '62

The field of biophysics was brought to the attention of the Physics Department at its weekly colloquium in 26-100 last Thursday at 4:00. John R. Platt, visiting Professor of Biology at MIT (on leave from the Physics Department of the University of Chicago) spoke on the question of "How We See Straight Lines," reviewing recent biological research into the mechanics of the eye.

Prof. Platt opened by pointing out a number of mathematically precise relationships in the field of biology, all of which are of interest to physicists. These include: biological rhythm, Mendelian laws of genetics, Morgan's linear genetic map, additivity in three color matching, numerical relations between overtones in harmonics, and geometrical patterns. This final category contains structural patterns (such as the bark of trees) and visual patterns, upon which Dr. Platt proceeded to expand.

Receivers Arranged Randomly

The visual receptor in the eye, the retina, is composed of

rods and cones, in a random arrangement, not in a fixed pattern like the bees' honeycomb. It is therefore curious that it is possible to see straight lines without any continuous lines of rods or cones. Furthermore, humans exhibit no directional preference in seeing things.

The first question arising is: How can the brain decide which receptors lie along a straight line? With the vast selection of possible biological accidents (such as cosmic rays striking and destroying a receptor) it would seem that some errors would result. Each cell has a diameter of about one micron, subtending one minute of arc; but visual acuity is about that sharp.

The ability to distinguish between two points is limited to a minimum of about one degree; however, other forms of visual acuity are better: a break in a line subtending only two seconds of arc can be detected; this angle amounts to about 1500 Angstroms. Prof. Platt explained that Helmholtz had suggested many years ago that certain parts of the eye "know" whether they're up or down, right or left; but there seems to be a genetic limit to the acuity of the eye. Genetically, identical twins should have sufficient dissimilarities (according to probability) such that one of them should perceive straight lines as irregular. However, in no case has this been observed; this fact disproves the idea of a brain "map" of the rods and cones.

Eye Has Three Motions

Other experimenters have shown that the eye constantly performs three motions: a drift through a few degrees of arc; a slight tremor superimposed on the drift; and a sudden occasional flick, returning the eye to its normal position. Obviously, the eye is scanning the visual object at all times. These experiments have also shown that as soon as an image is stabilized, the eye ceases to see it. Apparently scanning is necessary for vision.

Dr. Platt suggests that scanning is what makes the lines appear straight; with scanning, a random bundle of rods and cones can determine a straight line, without the brain knowing the location of any single element. Six fundamental concepts are determined in this way: straight lines, parallel lines, uniform curvature, concentric curvature, equidistance, and equal angles.

The concept of "self-congruence under displacement" is of utmost importance in relating scanning to visual perception. Prof. Platt illustrated this concept with the example of preparing a spherical surface by grinding two blocks together: spherical surfaces are self-congruent, and can be formed in this way. Cylinders and flat surfaces can be made in a similar way. All such surfaces are self-congruent under displacement, and appear unchanged when scanned over.

Precision Is Great

The eye generates a very precise relationship in detecting straight lines: proper detection requires invariance to: the location of elements; damage or loss of elements; and distortion of images. We do not see objects, but relationships.

Prof. Platt closed with the suggestion that it might be possible to form a new geometry in which the root postulate is the requirement of self-congruence under displacement. A wide variety of theorems could be constructed, based on the six visually-perceived concepts.

which button for Buffalo?

Automatic cars with button and lever controls may seem far out right now. But Ford Motor Company scientists and engineers are busy prying out and buttoning down some fantastic computer-controlled guidance systems for future Ford-built cars.

Among the controls now under study at Ford is a radar system that warns a driver when he gets too close to the vehicle ahead. Another is a short-range radio frequency device that extends the limits of drivers' senses by giving advance information on road surface and weather conditions, evaluating and appraising obstacles in the driving path ahead. When developed, control systems like these will enable drivers to enjoy safer, faster driving without fatigue.

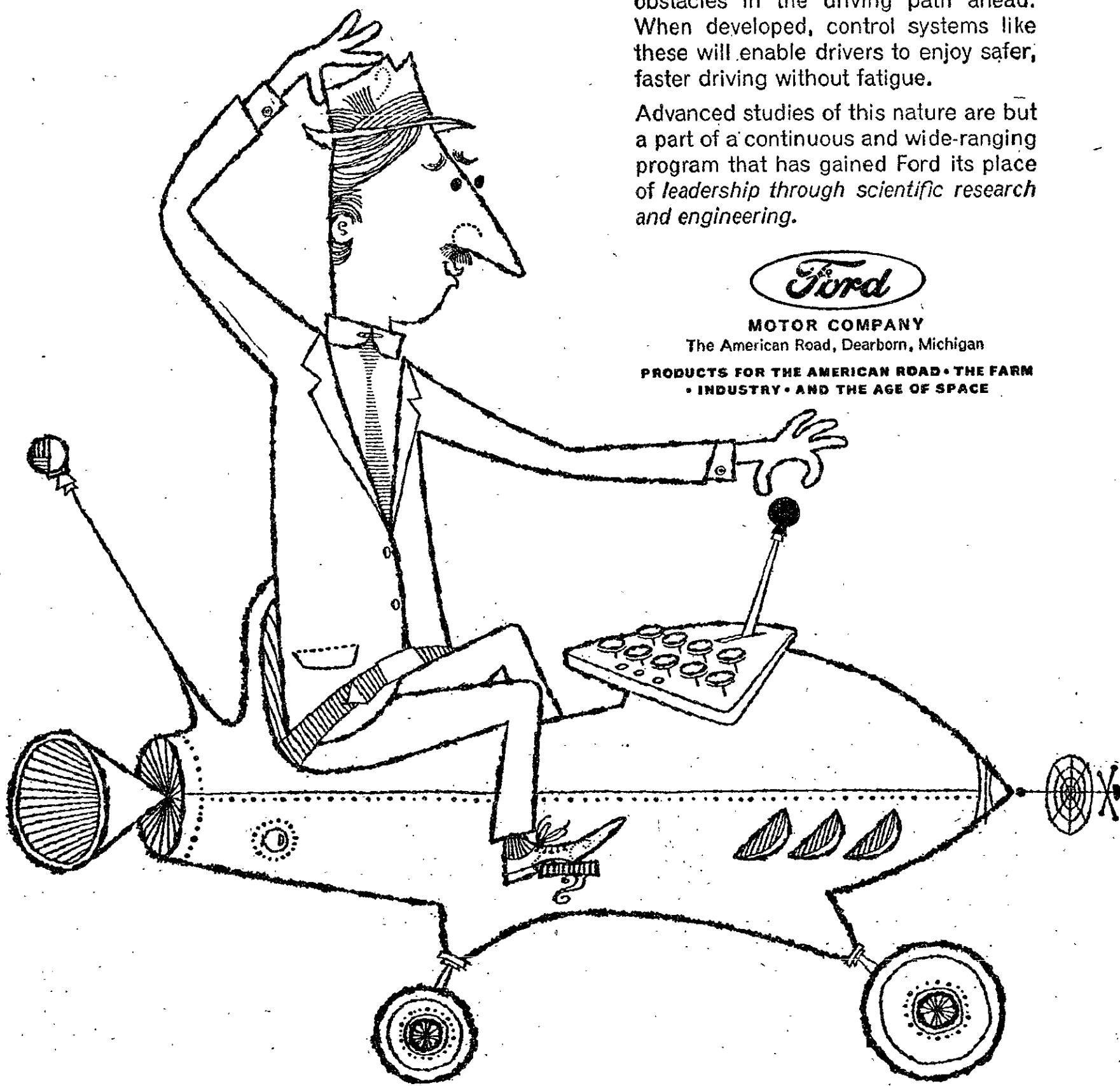
Advanced studies of this nature are but a part of a continuous and wide-ranging program that has gained Ford its place of leadership through scientific research and engineering.



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The Tech

Vol. LXXXI No. 29 Jan. 17, 1962

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Unsigned editorials appearing in THE TECH constitute the opinion of the newspaper's Board of Directors, and not that of MIT. The newspaper welcomes letters from its readers. Space permitting, such letters will be printed in whole or in part, if deemed by the editor to be of sufficient interest or benefit to the community. Brevity increases the chance of publication. Anonymous letters will not be printed. Names will be withheld upon request.

An MIT Education

MIT has acquired for itself a formidable scientific reputation, both for the professional competence of its graduates, and for the accomplishments of its own laboratories. In the great majority of cases, it is this reputation that is bringing applications for admission to MIT, and for this reputation, MIT can be justifiably proud. But in the larger sense, what is the accomplishment of MIT as an educational institution? Here the answer is not so clear.

How does one go about determining the efficacy of an education? The one sure way is to evaluate the accomplishments of the alumni in the light of the institution's educational goals. It is not really possible for a person to evaluate the education he received in college, except perhaps in the perspective of his experience afterwards. We do not know how close the faculty thinks it is coming in arriving at its aims in undergraduate education here, but a great many undergraduates have had disturbing thoughts about their education.

The Institute is a much more serious place, and in some ways a grimmer place, than most colleges of reality or fiction. Graduates are in many senses of the word professional people, and their studying is directed towards a goal that many professions require only after several more years of work in law school, etc.

It is this professional competence that MIT does so well in instilling in students; the other factors in life MIT falls down in. It is a minority of students who attain a professional set of ethics to go with their professional competence, and who fully understand that they have responsibilities as citizens aside from their responsibility to excel professionally. For many, the four years here becomes a self-centering egocentric existence, removing the person from contact with social responsibility and thrusting him in upon himself to learn the art of gamesmanship within the MIT system.

Is MIT creating the "crusaders and martyrs" of tomorrow? Frankly we doubt it. The tendencies of the four years here are to encourage a singleness of purpose that lies wholly within a narrow professional field, in many ways far removed from physical reality. The scientific world as it is constituted here, encourages a goal of professional success very often attendant with social complacency and material security.

MIT has set itself high goals for the second hundred years of its existence. If it hopes to have its graduates play as large a role in the coming century as it would like, it will probably have to change its atmosphere from one of purely scientific ferment to one of general intellectual upheaval. Few MIT students have ever had much contact with anyone studying philosophy, or history, or literature or any one of the many fields of non-scientific pursuit that actually do make up the world about them. Few students ever give any thought to the moral implications of the research they do. Few are inculcated with a sense of rigid intellectual honesty. There are many who think nothing of being totally obnoxious to their neighbors.

Certainly there are no easy solutions to such problems. It is really the question of what makes a university great. MIT is expanding outward from its original conception as a solely

technological school built around engineering. It is moving toward something described as a "university polarized about science." Perhaps when this is attained it will be closer to being a university than it is now, closer to marking out a sphere of influence that has wider horizons than the mere creation of scientific thinking machines.

Coda

This is the last newspaper to be published by the current Board of Directors of *The Tech*. The first issue next term will be in the hands of the Board of Volume Eighty-two to whom has been entrusted the task of carrying *The Tech* to greater excellence. The present Board takes a measure of pride in its accomplishments over the past year and believes that the MIT community agrees that great forward strides have been made.

The Tech has been taken from a small, financially desperate newspaper with a dubious future to a much larger one, on a firm basis with bright prospects for the future. We have felt that there is a great need at MIT for a large, comprehensive newspaper to serve all the various campus groups, and in the relatively short period of a year we have striven our best to make *The Tech* just that. If we have succeeded or failed, is up to our readers to decide, but we are happy to report that our circulation has reached an all-time high, which we accept as a kind of vote of confidence.

In terms of news, the year has had its moments of excitement and of relative calm. It is difficult to single out the most important MIT events during the course of a year, but circumstances made certain items point toward the future. We reported such notable events as the rise in tuition, perhaps portending more to come, and the burning of the Tech Block which cleared the way for planning on the proposed Student Center. Regarding people, we noted the appointment of Professor Wadleigh to the possibly enlarged post of Dean of Student Affairs, and of physicist Charles Townes to the post of Provost, unfilled since Dr. Stratton was promoted first to Chancellor then to President.

The Tech reported on two riots, one supposedly directed at Fidel Castro, the other at the tuition hike. There were also the more mundane topics in the news, including the arrival of the freshman class, the activities of the Institute Committee, the Junior Prom, and on, and on.

The highlight of the year for *The Tech* of course, as well as for many others in the Institute was the Centennial celebration, and all the attendant events. The Editors and staff of Volume Eighty-one turned out a special twenty-page newspaper the week of the celebration, detailing the events taking place, and covering the history of MIT from its inception to the present. In the following week, *The Tech* reported the speeches of Prime Minister Harold Macmillan, Secretary of State Dean Rusk, and the other noted persons who spoke. Later, *The Tech* covered the special weekend social celebration of the MIT hundredth anniversary, and heartily endorsed efforts to make it over into an annual Spring Weekend.

Editorially, the Board of Directors decided to embark upon a policy of being a vigorous and determined critical voice on campus. This involved venturing into new areas and commenting upon a wide range of subjects. For the first time in anyone's memory, *The Tech* decided to endorse a candidate in the election for Undergraduate Association President, feeling that one man had far superior qualifications for the job. Part of the year was occupied with discussion of the then very controversial evaluation report of the Student Committee on Educational Policy (SCEP). The report was published on this page in the interests of beginning an overall evaluation of the level of MIT instruction. Several weeks of heated controversy ensued, after which the issue was temporarily dropped, the objective having been partially accomplished.

Editorials on this page covered other such disparate topics as the Activities Council, the Calendar, the grading system, governmental and scientific morality, politics, and many more of the day to day items of interest. The Letters to the Editor column usually made lively reading very often sustaining controversies of its own, or carrying comment on previous editorials as in the case of the fallout shelter dispute.

To Allen Womack, to whose care and nurture we commit this page, and to the entire new Board we wish the best of luck with Volume Eighty-two. And the old Board wishes to publicly express its appreciation to the many people in subordinate positions who carried, in nearly anonymous fashion, a large burden of the work that made publication possible.

Letters To The Tech

Director of Libraries Replies To Editorials

To the Editor:

In *The Tech* for November 8 and November 15 you ran editorials which I hope were widely read. They constituted a thoughtful evaluation of some of the most serious problems confronting the Libraries, particularly the Science Library. Being the most crowded of all, this is where deficiencies are the most obvious.

Traditionally, libraries are quiet places. The heavy flow of traffic in and out of the Hayden Building, charging books out, checking them in, questions and answers, telephones, bookchecking—all of these contribute to a level of noise which has been getting steadily worse, as the number of people using the Science Library has increased over the past few years to a weekday average which is now over 1500.

Your suggestion of a glass-and-steel partition across the entrance to the Science Library is being carried out. The lobby thus provided will protect the users of the Science Library from the noise of those on the stairs. All borrowing, returning of books and bookchecking will be done there. Specifications are being drawn up and the money has been set aside. The partition will be prefabricated elsewhere, brought in and installed with as little disruption of work in the Library as possible.

Fluorescent lighting for the Science Library would be desirable, although for most of the area the present level of illumination is adequate. The recommendation of 25 foot candles is made by Dr. Keyes Metcalf, former Director of Libraries at Harvard and the foremost library consultant in the country today. Portions of the Science Library near dark walls, particularly the northeast corner, are as low as 5 foot candles. An attempt will be made to improve this by trying different bulbs in the fixtures; if this fails, the walls will be painted with a lighter color.

Another topic mentioned in your first editorial was reserve books. If there is only one copy of a book on reserve, there may be several reasons. For subjects with enrollment of not more than ten, it is generally considered that one copy of a reserve book is enough, though we try to have one copy for every five students if there is a large amount of material to be read in a short time. There is not always money enough to do this, nor is it always possible to buy enough copies. The book may be out of print. In the Reserve Book Reading Room many copies are provided for subjects with large enrollments. There are 32 copies of *Introduction to Contemporary Civilization in the West* and 58 of *Thorpe's American Issues*.

In all the Libraries, books are put on reserve as requested by the instructor on a form sent out at the beginning of each term. For the reasons mentioned, there may not be enough copies to meet the demand at busy hours; still, may I suggest that, whenever a student feels there are not enough copies or that some book should be on reserve which is not he might mention it to the librarian. If the book is urgently needed and in print, we can get one or more copies quickly.

Steps are being taken to plan ahead for the development of the Library system as the Institute expands in size and in diversity of interests. A new Long Range Planning Committee for Libraries was appointed by President Stratton in the Fall under the Chairmanship of Professor Thomas K. Sherwood of the Department of Chemical Engineering. The members of this Committee are Professors Douglass V. Brown, Industrial Management; Evsey D. Domar, Economics; Joseph H. Keenan, Mechanical Engineering; Henry A. Millon, Architecture; and Philip M. Morse, Physics. The committee will be talking with representative groups of stu-

(Please turn to page 5)

Kibitzer

By Steven Levy '63

South opened a weak two diamond bid, but North should expect his partner to hold near the top range because of vulnerability. North started to explore game possibilities by bidding two no trump (conventional—asks for outside control). He raised South's three diamonds to four diamonds leaving his partner with the decision. South stretched to five diamonds and was furious when dummy was spread. He conceded down one and began to lambast his partner for raising diamonds with only four tricks. "Why didn't North gamble three no trump?" asked South. "How can you raise to five diamonds with less than a maximum and with no outside values?" screamed North.

Both have reasonable points, but both overlooked the fact that five diamonds makes. So did all the kibitzers. This was fortunate as they (a good campus partnership) were nearly swinging at each other.

If diamonds split there is a possibility of end-playing one of the defenders. This is remote and five diamonds is not nearly an even money contract, but declarer should try, anyhow. If a defender can suit and if he can be forced to take the third trick in the other suit, he is trapped. Fortunately, there is a line of play which postpones the decision until trick 11.

Take the opening lead and draw two rounds of trump. They split so the first hurdle is cleared. Now lead a low heart, take whatever is returned and

North			
♠ A K 7			
♥ 8 6 5 3			
♦ 9 7 2			
♣ A K 9			
West		East	
♠ Q 9		♠ J 10 8 3 2	
♥ Q 7 2		♥ A K J 10 4	
♦ 10 6		♦ 5 3	
♣ Q J 10 7 4 3		♣ 6	
South			
♠ 6 5 4			
♥ 9			
♦ A K Q J 8 4			
♣ 8 5 2			
Bidding:			
South	West	North	East
2♦	P	2NT	P
3♦	P	4♦	P
5♦	P	P	P
Lead: ♣ Q			

ruff out the hearts using dummy's high clubs and spades as entries. This leaves you:

North		South	
♠ 7		♠ 4	
♥ —		♥ —	
♦ 9		♦ A	
♣ 9		♣ 2	

Now declarer can count the hands and assess his chances. As it happens, West has sluffed out in hearts, has shown two spades and is marked with the club jack. The beauty of this line of play is that declarer can play 10 tricks and preserve a chance for any possible end-play. Some will be less obvious and he may find out that there is no play, but then there was no chance anyhow. If trumps hadn't split, declarer always has the chance that the opponents will stuff carelessly when he runs diamonds.

Letters:

(Continued from Page 4)

idents and faculty over the coming months.

Turning to book checking, our statistics show a drop in losses since bookcheckers have been stationed at the doors of the Engineering and Science Libraries. In Engineering, there is a man only part of the time. It is also true, as mentioned in your second editorial, that the bookcheckers do not always stop people who are carrying out books. They try not to bother those people who appear to have only text books or notebooks. Of course, it is possible to smuggle books out of our Libraries, or any library. We have to rely on the decency and common honesty of the great majority of people. The bookcheckers are a symbol that we expect everyone to charge out the books he wants to borrow; they are a reminder that taking a book out of a library without

signing for it is on a level with shoplifting.

In most of our Libraries no distinction is made in borrowing of journals by graduate students or undergraduates. It is true that in the Science Library certain departments have requested that only faculty and graduate students be allowed to take their journals out. Most science departments limit their journals to overnight loans or do not allow them to go out at all because the demand for them is so high. When we have subscriptions in duplicate, the second or third copies can be borrowed and sometimes other libraries such as Engineering or General & Humanities have copies which are allowed to go out. The trend in science and engineering libraries throughout the country is toward keeping at least one copy of every journal always available, so that anyone who wants to use it can be sure it will be there whenever he comes in.

Undergraduates and graduate students form the largest number of our readers. We are eager to make the Libraries a convenient, comfortable, efficient place for them to work. Suggestions such as those in your editorials will always be welcome as we try to improve the collections, the rules governing their use, and the physical facilities.

William N. Locke
Director of Libraries

UAP Outlines Student Government's Projects

To the Editor:

In answer to your editorial concerning the UAP's personal communication with the student body, I would say that your point was well taken. As you noted, student government at MIT is a much more serious business than at other schools or than the majority of the undergraduates would seem to realize. MIT's policy of non-interference in affairs which are strictly of student concern has given to MIT student government a large range of responsibilities which at other schools are left within the province of deans or proctors. Student control of disciplinary matters, of extra-curricular activities, of activity funds, and of dormitory regulations are areas which require competent and responsible student government officials. The continued student control of these affairs is contingent on the responsible performance of current officers. Hence, even in the daily administrative tasks of his office, the MIT student government must perform with a degree of competence unmatched by their counterpart at other institutions.

In addition to the maintenance of the present system, the student government is responsible for innovations; in the words of your editorial, the student government (as headed by the UAP) is "... supposed

to be a major source of new ideas for MIT, and the main means by which new ideas affecting students are put into effect." It is these areas of innovation which receive publicity which give the student the feeling that student government is doing something. Many of our current "irons in the fire" have been reviewed by your paper, but perhaps added reference to some of these will give a concrete picture of how we're spending our time:

Student Union - Due partially to the burning of the commercial facilities opposite Building 7, the long-proposed Student Union has suddenly approached reality. Working from a joint student-faculty report compiled in 1958, the architect, MIT's Professor Catalano, has designed the building which was described in an earlier issue of The Tech. Currently the Student Committee for the Student Union headed by Frank Levy and Lou Davidson are collaborating with Professor Catalano in developing the interior of this building. This committee has accumulated space requests for the building from most of the activities and is evaluating these requests in terms of the philosophy of the building and in compromise with the lounge, bowling, and dining facilities which will also be included. Shortly after the beginning of the second term a presentation of the revised plans will be

made to the entire student body.

Student Enterprise - Currently the various classes of student entrepreneurs at MIT have no guidance of or control over their activities; this situation is exemplified by the controversy which arose over the Walker Staff Quiz Booklets. The Institute Committee has just begun to establish a policy and a system of controls for these groups insofar as it may be needed. A brief introduction to the problem was made at the last meeting; discussion concerning policy and controls will take place at the first meeting next term.

Foreign Opportunities Committee - This group is investigating the various possibilities of education and employment in foreign countries. Several foreign firms have been contacted concerning employment opportunities, and the committee is compiling a list of the various organizations which participate in these sorts of programs. Several weeks ago the proposal of a Junior Year Abroad program was presented in The Tech; research into the problems and possibilities of this proposal are still under investigation.

Spring Week-End - The success of the Student Centennial Week-end last year coupled, with the general MIT social vacuum, suggested to us that we attempt to establish a traditional MIT spring week-end. The arrangements for an all-campus social weekend on May 4, 5, 6, are being completed by Erich Ippen, Neil Weatherbie and their committee for the weekend. Announcements concerning the entertainment personalities should appear early in the second term.

These are a few of the topics with which the UAP and the Institute Committee are working; programs such as an investigation of the average cost of attending MIT, and study of the MIT student's academic ethics are just beginning. In addition to these special subjects the permanent sub-committees are coping with such diverse areas as educational policy, judicial matters, freshman coordination, and financial policy.

This comprises a sketchy outline of new projects with which student government is concerned at the Institute level; in addition to these many other things are happening within the student governments of the individual residences and the various activities. It is not to be forgotten that in many cases, the nature of the situation makes innovation difficult, but at least equal skill and time are needed to perform well in these instances as to participate in projects which lend themselves easily to publicity. Nevertheless, our responsibility for communication is realized and will be fulfilled wherever possible.

J. Frank Osha, '62
Undergraduate Assn. President

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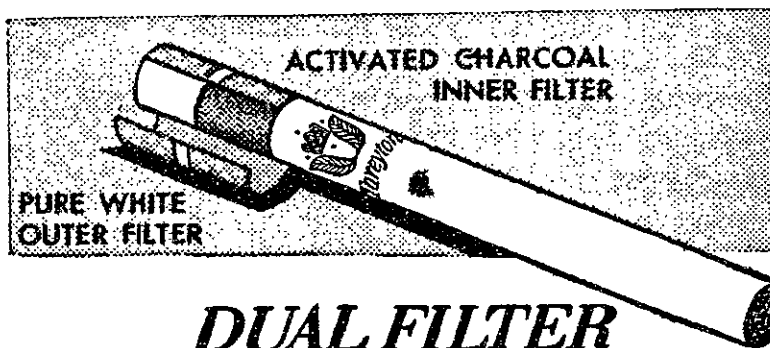
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A noted Boston politician has something to say especially for students. If you have been concerned about the things you have heard on corruption in Massachusetts, we invite you to come and ask your question.

Gabriel Piemonte will speak to the Liberal Religious Student Group at 3:00 on Sunday, February 4, at 64 Marlborough Street.

Any interested students invited - bring a friend!

College World

Illinois Tech Existence Threatened By New Univ. Of Illinois Campus

"Down With Finals!" This gets to be a common theme for many people around this time of year. Unfortunately for them, this is hardly ever the official viewpoint of a college administration. Hardly ever, that is. The Education Planning Committee of Oregon State University has recently brought a resolution before the university's Faculty Senate, proposing the abandonment of final examinations. The Committee wants the finals replaced by an extra week of classes—an objective to which I'm sure few students would object. Courses which now give finals would replace the exams by a quiz in class during the last week of the term. One of the major goals of this proposal would be the elimination of the examination scheduling conflicts which are apparently a tremendous administrative problem at the university.

ROTC Eliminated

Once you abandon the finals the next thing to do is to abandon the courses. The University of Connecticut has taken a step in this direction by deciding to abandon the compulsory ROTC program. Effective next September, all ROTC programs will become voluntary. Until that time, all freshmen and sophomores have been required to enter either an Air Force or Army ROTC program. The university administration has said that this move should have no effect on the number of students who follow the programs through four years to get a commission, but the total number of students who enroll in the program for two years will probably be cut in half.

A drop in enrollment is a more serious problem, however, for the Illinois Institute of Technology in Chicago. IIT is faced, not with a drop in ROTC enrollment, but with a drop in total enrollment. The very existence of IIT has been threatened by an announcement that the University of Illinois is planning to open a Chicago campus. The concern of the IIT community is reflected in the following editorial from IIT's Technology News.

As U of I Comes to Town: Can Illinois Tech Survive?

"By 1964, while half of today's Illinois Tech's students will still be here, the University of Illinois plans to have 16 buildings completed on its new Chicago campus. The university plans to begin with

9,000 students in the undergraduate school, and plans to expand to an enrollment of 20,000 in less than eight years from now. This is ten times the enrollment of Illinois Tech.

"What, then, will happen to us? Will Illinois Tech die and leave its buildings to Armour Research Foundation? Will we become an extension of the campus of the U of I? This seems to be inevitable if we fail to face up to the competition from the new state university.

"The University of Illinois downstate enjoys an outstanding reputation in several of the sciences and liberal studies and a very good reputation in engineering as well. The Chicago campus will carry some of this reputation (deservedly or not) with it immediately. After it becomes well-established it will no doubt increase in stature and strive to satisfy the market for a good education in engineering, the arts, and the sciences.

"It is hard to see why the parents of a high school graduate in Chicago would send their child to Illinois Tech if a school of comparable reputation exists in the same city and costs \$800 per year less.

"It is true that we might still attract out-of-town students, but at present we are so dependent upon Chicago for a supply of students that if this supply is cut off to any appreciable extent, I think we will cease to function.

"What is being done to save Illinois Tech? Until the for-

mation of the new committee for institutional planning it had appeared that this institute's planners were playing ostrich, thinking that somehow it all would work out.

"Now that the do or die nature of the problem has been acknowledged as evidenced by the formation of this committee, it remains to be seen what will be done.

"Many people sense a general exodus of outstanding professors from Illinois Tech. We have very few really notable or well-known professors, although we do have some. We are declining, some feel, in this field.

"Illinois Tech has had very inadequate publicity. Many people, even in the Chicago area, haven't even heard of us. A good percentage of those who have heard of Illinois Tech think it is just another vocational school. They are never even told that we have liberal studies departments, and very good ones at that!

"These are but a few of the problems that should be placed on the top priority list. If we are to continue to exist we must not cater to the mediocre student—the University of Illinois can and will take care of them. We must build our reputation as never before in order to attract students and professors of the highest caliber. We will not be able to compete on the University of Illinois, Chicago campus level, so we must try to compete on the MIT level. It can be done.

"It may seem hard to believe that Illinois Tech could just wither and die. But if it does not shape up soon to face reality, why shouldn't it die?"

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U.S. International companies have broadened their horizons as they search today for knowledgeable young college graduates to send abroad to manage their foreign business operations. Once they sought men trained in business. Today (although it may come as a pleasant shock to those who may have felt hesitant about breaking into the world of international commerce), the companies are hiring liberal arts graduates (with varied majors), scientists, engineers, agriculturists, pharmacists, and others as well as graduates in business administration, accounting, economics, and marketing for careers abroad.

The appraising eyes of the recruiting representatives of most U.S. international firms and government agencies see a man as employable if he has the proper attitude for an overseas career, a general aptitude, and, most important, an additional year of practical training in foreign trade techniques, in a spoken foreign language, and in the social, cultural, and business aspects of the world's marketing areas.

One of the world's pre-eminent authorities in the culture, economics, and politics of Latin America, Dr. William L. Schurz, director of the area studies department of the famed American Institute for Foreign Trade in Phoenix, Arizona (and author of the current, best-selling *Brazil, The Infinite Country*), observes that "the practice of foreign trade is no longer a simple business transaction to be conducted on a 'main street' overseas with the good old American 'hard sell'."

"Nor is it a high-level operation to be master-minded here at home by theoreticians," says Dr. Schurz, a former Commerce Department economist, "but an art to be practiced by professionals preoriented and specifically trained in the U.S. before being thrust into a career with private enterprise abroad."

That means postgraduate saturation in the culture, psychology, economics, politics, and social customs of the global marketing areas in which U.S. companies are interested. The art of foreign trade also demands practical training in the modus operandi of international commerce and a working knowledge of a foreign language.

Recently, leafing through the alumni file of the 16-year-old American Institute for Foreign Trade, Dr. Schurz, the "dean of Latin Americanists" (who has probably trained more young men for careers abroad than any other living American) singled out a group of typical AIFT graduates who have already attained executive status (president, vice president, director, general manager, sales manager) with some U.S. international firm.

From these cards, he selected several examples of the AIFT "success story": one graduate, now vice president for all operations of a prominent U.S. soft drink company in the Middle East (with his office in Beirut), started out by working for that company in the Philippines, Australia, and Latin America; another, now general manager of one of the world's best-known tire and rubber company's operations in Italy, emigrated some years ago from Italy, was college-educated in the U.S. and postgraduate-trained at The American Institute for Foreign Trade, and began his career at the foot of the ladder; still another graduate, now general manager for Western Europe of a large American drug firm with extensive foreign outlets (with headquarters in Lisbon), got his start by serving a long, fascinating apprenticeship in the back country of Brazil, where he sold medicines and drugs to village apothecaries out of a jeep; another, who is president of the International Trust Co. of Li-

beria (in Monrovia); one, a recent graduate who, in three years, has risen to the sales managership of a big U.S. steel company subsidiary in Brazil (with offices in Sao Paulo); another "Thunderbird" (as they are widely known), now managing director of operations in Indonesia for a familiar U.S. firm (with executive offices in Jakarta), who (like many another AIFT alumnus, has spoken proudly of the school) persuaded a young Indonesian to enroll at the Institute this fall and has just arranged with the State Department to send two influential Indonesian trade executives to visit AIFT.

Dr. Schurz went on casually turning up cards showing: an alumnus who, after a few significant foreign assignments, has become assistant vice president for overseas personnel of one of the biggest U.S. international banks; another, who is president of all Peruvian operations of a huge U.S. department store chain; two alumni who are overseas general managers of two U.S. insurance companies (one in Santiago, Chile; the other in Bangkok, Thailand); a graduate who heads a U.S. international bank branch in Tokyo; another, who is Latin American general manager for a large U.S. cosmetics company.

There are many more of equal and lesser stature who are actively combating the Communist economic offensive abroad by setting an example with their AIFT-acquired "know-how" of the functioning of U.S. private enterprise abroad.

Senator Barry Goldwater, member of the Institute's board of directors, in a recent speech on the Senate floor applauded the major role played by the more than 3,000 graduates of this young school in the meteoric rise of U.S. foreign trade. Describing these alumni as "America's best-trained and most highly-respected body of goodwill ambassadors," he called The American Institute "private industry's training ground for its thousands of junior and senior executives in 78 foreign nations."

Graduates in most branches of liberal arts, business administration, science, and engineering are sought annually at AIFT by more than 500 U.S. international businesses and banks. The Institute's sole placement problem appears to be its inability to fill the pressing demand for engineers, accountants, chemists, and other technically-trained college graduates with AIFT's specialized training for overseas operations.

Cited by U.S. and foreign industrialists, educators, and government officials as our most effective institution for training college graduates for international commerce, AIFT offers a 3-part curriculum emphasizing three general world areas: modern foreign trade practices, spoken languages (Spanish, Portuguese, French), and living cultures of the peoples in Latin and Central America, the Far and Middle East, and Western Europe.

About 300 carefully screened men are graduated yearly. The postgraduate program lasts two semesters, a new class starting both in January and in September.

Industry and government officials have been widely quoted as saying that there is no institution of comparable prestige for training in international commerce. Senator Goldwater predicts that most Americans who become business leaders in trade centers around the world in the next few years will have been trained "specifically at The American Institute for Foreign Trade." (For more information, write Registrar, Thunderbird Campus, The American Institute for Foreign Trade, P.O. Box 191, Phoenix, Arizona; telephone 938-0000.)

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Washington Peace Demonstration Planned For February 16

THE TECH
WEDNESDAY, JAN. 17, 1962
Page 7

In this and two articles to follow, the development, extent, and proposals of the Walk in Washington will be examined in detail. Information for students who wish to participate in the demonstration will also appear in this column.

By Don Goldstein '65

There's nothing new anymore when a bunch of students get together and demonstrate (or picket, or ride buses, or even sit down) about something. And the novelty has so worn off that few people pay much attention any longer when these kinds of stunts are pulled off. Obviously, though, there must be some reason, other than lack of originality, that most student demonstrations have failed to be readily effective in influencing public opinion and national policy.

The reasons have been best pointed out by the critics and sympathetic abstainers of student action movements. "They just don't know what they want—why can't they propose something concrete and practicable?" ask many of these people. Others say, "Those students are radicals with no support. They are even divided among themselves, so how can they expect to convince us?"

Such charges are usually valid, and yet fail to damp the enthusiasm of "hard core" liberals who support the demonstrations. Therefore, there exists a stalemate situation with no one getting anywhere (and not much affecting the present situation in the attempt).

A new student demonstration movement has been organized, however, which will break the stalemate if any will. Started by the "Boston Ad Hoc Committee for a Walk in Washington" last fall, this group is calling for a nationwide student-faculty demonstration in Washington, D. C., Feb. 16 and 17, in support of meaningful United States initiatives in halting the arms race and beginning the "peace race."

Nationwide Backing

The differences between this and previous demonstrations are significant and decisive. It has, through extensive re-

search, produced a detailed and documented program of realistic proposals, which it will offer as the basis for the demonstration. Besides appealing to the public, the Walk in Washington will establish contact with policy-shapers in Congress and the executive department through prearranged personal appointments. But more important, it will be strong and united in its efforts, having the backing of student peace organizations all over the country, including the MIT Student Organization for a Rational Approach to Disarmament and Peace, and groups like the Student Peace Union and Student SANE. The physical presence of more than 1000 students, and possibly as many as 5000, from dozens of campuses will be the direct symbol of the walk's purpose and solidarity.

The Walk in Washington is an outgrowth of a larger and more comprehensive idea embodied in the national Turn Toward Peace movement, originating in Boston early last fall. Turn Toward Peace represents a united effort by adult and student peace groups, labor, church and other organizations, to stimulate a nationwide search for alternatives to present U. S. foreign and defense policies. When TTP first brought together representatives from Boston area campus peace groups, they found that there were many common ideas that could be translated into action most effectively through cooperation, if possible, on a national scale. One of them was to organize a Washington demonstration which would confront the government with a student-backed program for peace based upon a realistic and mature appraisal of the present cold war situation.

Harvard Tocsin Leads

The leading group in the effort was Harvard's Tocsin, a two-year-old organization with about 75-100 members, many of them political science majors. Tocsin was formed by students who were dissatisfied with the sloganeering and uninformed generalizations that had characterized previous groups at Harvard and other universities. They organized themselves into

task forces for purposes of research into the manifold complexities of the arms race and possibilities for disarmament. This knowledge and experience has provided the starting point for the walk's final program as nucleus about which ideas could condense.

Peace Walk Endorsed

The Boston Ad Hoc Committee was formed by leading members of Tocsin, MIT's RADP, and the peace group Brandeis, with Todd Gitlin, Vice President of Tocsin, as Chairman. The evolution of the walk's program has since passed through three stages. A preliminary statement of proposed U. S. initiatives was drafted in November by the committee. Seeking national student support, several committee members met over Thanksgiving in New York City with leaders of the Student Peace Union and Student SANE. These students fully endorsed the idea of a "peace

walk," but found the preliminary statement unsatisfactory because it was too nebulous and too unilateral in its approach.

They set out, however, to obtain support from other national groups and from individual campuses, while the committee headed home to revise the program. A second draft was completed during December as support began to build up. Problems mounted also, in the form of transportation, money, publicity, appointments, and accommodations for students spending the night in Washington; these are still being resolved by the committee and by similar coordinating groups all over the nation.

Another meeting with national leaders took place over the Christmas vacation, at which the remaining disagreements were settled and outline of the final statement established. This statement was drafted and printed during the first two weeks of this month,

and is now available from RADP. In addition, full details on all other aspects of the walk may be obtained at Wednesday night's RADP meeting, at which Professor Charles Coryell will give his views on the idea behind this demonstration.

The final program to be presented at the Walk in Washington will encompass five areas: Opposition to atmospheric nuclear testing by the U. S.; a proposal for the withdrawal of our missile bases from several countries overseas where they are so vulnerable as to be useful only for a "first strike"; an appeal for U. S. initiative in channeling foreign aid through the UN; requests for government pledges to refrain from giving nuclear weapons to any new countries; and to seek disengagement as a settlement of the crisis in central Europe.

The entire list of proposals will be considered in detail in the next issue of *The Tech*.

Satellite's Gyroscopic Properties Utilized

One single-degree-of-freedom integrating gyroscope could stabilize a communications satellite and keep its radio antenna always pointed down, studies at MIT's Instrumentation Laboratory have shown.

The one-gyro concept was worked out under a study sponsored by Bell Telephone Laboratories, Inc., Murray Hill, N. J., in connection with Bell's design work on the possibility of a world-wide communications network using satellites as relay stations.

The new concept, described in a recent report, takes advantage of the fact that a satellite, with one surface continually pointing toward earth, itself has gyroscopic properties; it rotates about an axis through its center of mass (an axis which is perpendicular to the orbital plane) once each time the vehicle orbits the earth.

The MIT one-gyro concept combines the gyroscopic reaction of the satellite with that of the single gyro to achieve relative precession of the vehicle and the gyro's gimbal. The oscillatory energy of the vehicle is dissipated as heat in the viscous damper of the gyro.

Skew Key To Stabilization

A key to one-gyro stabilization is skew—or tilt—in the

reference axes of the gyro and in the radiation axis of the antenna relative to the principal inertia axes of the satellite.

At the time the satellite is built, the antenna would be mounted with its radiation axis skewed away from the vehicle's axis of least inertia (the axis that ordinarily would align with the local vertical when the satellite is in orbit), around the satellite's axis of intermediate inertia (the axis that tends to align horizontally in the orbital plane).

When installed, the gyro would be given a similar skew in the same direction, but with reference to the radiation axis of the antenna. That is, the input reference axis of the gyro would be skewed (around the gyro output axis) away from the antenna radiation axis, but in the same direction as the original skew given the antenna.

After injection and as orbiting begins, the axis of least inertia of the satellite would seek to align along the local vertical. At the same time, the gyro element in the gyroscope would seek to align its spin axis with the axis perpendicular to the orbital plane.

A torque generator, or similar device, is located in the gyro. Its purpose is to exert a torque in one direction on the gyro gimbal and, hence, a torque in the opposite direction on the gyro case (and, at the same time, on the vehicle to which the case is attached).

Because of the torque generator torque, the satellite achieves its equilibrium position only when the vehicle axis of least inertia and the gyro's input reference axis become skewed in opposite directions away from the local vertical. This is the satellite equilibrium position because the gyro torque balances out the torques on the vehicle which arise due to gravity and vehicle body gyroscopic reactions.

If the angular momentum of the gyroscope, the tilt of the gyro reference axis, the tilt of the antenna radiation axis, and the gyro's torque generator torque are correctly chosen, the resulting balance between oppositely directed torques will produce an equilibrium orientation of the satellite in which the antenna axis is downward along the local vertical.

Components of gyroscopic angular momentum from both the vehicle and the gyro would combine to produce pitch damping, while the remaining components of angular momentum of both would combine to produce simultaneous damping of both yaw and roll oscillations.

In operation, a satellite using a skewed axis-single gyro stabilizer would orbit the earth with a permanent skew of its principal axis relative to the local vertical. But its attitude with reference to the orbital plane and the local vertical would be stable, and one surface (that associated with the radio antenna) would continually point earthward.

Concept Still Theoretical

The single gyro-skewed axis concept is still in the theoretical stage and is undergoing extensive analytical investigation to determine its eventual practicality. Computations show, however, that a 200 pound satellite (having unequal principal movements of inertia because of unequal internal weight distribution), in a circular orbit of an altitude of 6,000 nautical miles, could be stabilized with a gyro about the size of a water tumbler (gyro angular momentum of 100,000 gram centimeters per second).

Simultaneous stabilization around the roll axis and the yaw axis is the fortunate result of what is called "roll-yaw coupling." Perturbations in roll produce perturbations in yaw, and vice versa. The stabilization system, then, need only damp perturbations about one of these two axes and, inescapably, damping occurs about both.

The report pointed out that a vertically-oriented satellite would be bistable; that is, upon settling down the antenna could be pointing down or up. One solution to this would be two antennae, one at either end of the satellite, with a logic device to switch to whichever antenna is down at the time of use.

Another solution would be a flipper device—a small flywheel that, by turning a predetermined number of times, would impart enough angular momentum to the vehicle to cause it to flip over. A flipper wheel could be geared to turn on automatically in the absence of message signals from earth—an indication of an error in antenna orientation.

Stabilizer Essential

The report said the need for a stabilizing system for the communications satellite is inescapable. The oblateness of the earth, the unlikelihood of

(Please turn to page 10)

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The Bookworm

The Hearst Newspapers, which regularly treat their readers to nuggets of wisdom from the pens of such sages as Dorothy Kilgallen, Westbrook Pegler and Walter Winchell, may not have quite the influence or respectability of, say, The New York Times or The Christian-Science Monitor. But even the red-headlined New York Journal-American, highly spiced with airport cheesecake of departing starlets and titillating accounts of bizarre murder trials, seems austere when matched against the flamboyance of the Hearst press during the lifetime of William Randolph Hearst.

"The Chief" was the son of a mining prospector who had struck it rich in the wild and woolly days when the Old West

"The Roman Spring..." Tells Of Degenerate Love In Modern Rome

"The Roman Spring of Mrs. Stone", a screenplay adaptation of Tennessee Williams' novel of the same name, now at the Capri, leaves one with the immediate after-feeling of revulsion and disgust, much like the heralded "La Dolce Vita." The two movies have much in common, really, for they both treat of degeneracy in human beings. Whether or not seeing others on the road to hell has any worthwhile effect on an audience, however, remains a distinct question.

Mrs. Stone is an actress of some renown who suddenly begins to realize she is getting old and begins to suspect that her audience appeal is waning. So she decides to take a vacation in Rome with her husband. Unfortunately, he has a stroke in transit and Mrs. Stone arrives in Rome a lonely widow.

Mrs. Stone's loneliness soon touches the "heart" of the Comtesse, who arranges for her to meet the young g'olo Paola (with whom the Comtesse has a 50-50 split agreement). The rest of the movie is the story of Mrs. Stone's degeneration and Paola's slow rise from and quick fall back to the status of a stone-hearted philanderer.

Paola, who professedly has never loved before with his heart, falls in love with the image of Mrs. Stone as the "great American lady." As she finally succumbs to his charm, however, Paola begins to see frailties in the image (frailties created by himself), and his adoration begins to fade. Finally he leaves her to stalk new quarry. The movie ends on a vulgar note in which we see Mrs. Stone lose her last contacts with the dignified life she knew and invites a stranger in to

Vivien Leigh as Mrs. Stone showed herself still to be as fine an actress as she was in the immortal "Gone With The Wind." When we consider that the part as originally created by Tennessee Williams was that of a woman bordering on nymphomaniacy, we appreciate all the more the sensitiveness and dignity Miss Leigh gave to her role.

Warren Beatty, who played Paola, was severely outclassed by Miss Leigh in acting ability. Though it is customary to say that Beatty shows "great promise," I shall only to refrain from this; I can only say that he has improved somewhat from previous pictures. He still has the fatal quality of being detached from the character he is playing, that is, he says his lines properly and displays the right emotions at the proper times, but you still feel that he is Warren Beatty and not Paola. Warren J. Wiscombe

Citizen Hearst

By Mary Gail Menzel

Citizen Hearst
By W. A. Swanberg
New York:
Charles Scribner's Sons
555 pages, \$7.50

was there for the taking by anyone who could match the stamina and endurance of the land itself. In his declining years the elder Hearst set his heart on a U. S. Senate seat and was ready to use all the wealth and influence at his disposal to acquire it.

The rough and tumble game of California politics required lavish expenditures of money, and Hearst contributed heavily to the Democratic party and lent large sums to the Democratic San Francisco Examiner. He finally acquired the paper as a political organ when it was hopelessly in debt to him.

During this period, young Willie was having an undistinguished career at Harvard, resulting in his dismissal in his third year, as much for academic reasons as for his penchant for practical jokes. He then spent a year in New York where he got a job as a reporter for The World, Joseph Pulitzer's crusading, sensational, noisy, politically-liberal and reform-minded newspaper.

Hearst fell passionately in love with the style of The World and begged his father to let him take over The Examiner, a stodgy, staid money-loser, to fashion it after The World. Thus began a newspaper career that was to span over fifty years and a publishing empire that was to include at his death eighteen newspapers, twelve magazines and several allied enterprises.

Surely the most infamous episode in Hearst's career was the warmongering of his papers which in large measure helped to bring on the Spanish-American War and inspired the sobriquet "yellow journal."

Swanberg calls Hearst's coverage of the Maine disaster "the orgasmic acme of ruthless, truthless newspaper jingoism." Previously, when his Havana correspondent had wired "Everything is quiet. There is no trouble here. There will be no war," Hearst replied "You furnish the pictures and I'll furnish the war." He fulfilled his promise.

One of the enigmas, and there were many, in the character of "the Chief" was his personal shyness and humility, traits hardly to be expected in a man whose written word was loud and arrogant. Nevertheless, around the turn of the century he developed a political fever, indeed a presidential fever, that was to last most of his life, cost him a fortune and cause him heartbreaks that would have felled a lesser man.

A mark of his courage was his ability, through the greatest effort of a monumental will, to overcome his natural reticence for his entry into the political arena. Despite the influence of his newspapers, his goal eluded him.

Hearst's artistic tastes, however, were far from subdued. He imported countless European art treasures, and a good deal of junk, most of which was stored in warehouses and, because of its sheer volume, was never displayed. This, despite the fact that he owned seven castles. The most famous of these was San Simeon on which, it has been estimated, Hearst spent some 40 million dollars.

"The fact emerges," says Swanberg, "that he spent more for housing and decoration than any man in history, king or commoner."

Yet for all that could be, and has been, written castigating William Randolph Hearst, Swanberg maintains a commendable fairness in his biography. He points out that while Hearst's concern for circulation was overriding and was often satisfied at the expense of accuracy for sensationalism, he was also deeply concerned with civil injustices and used his newspapers to wage several successful campaigns.

He was a trust-buster before T.R. acquired the title, he attacked the unscrupulous and absolute power of the Southern Pacific Railroad and battled for equitable utility rates for "the masses," among many other laudable reforms he championed.

In trying to fathom the Hearst riddle, Swanberg concludes that he must be viewed as two men, not one. He was the personification of Jekyll-Hyde, and it is impossible to try to assay the personality of the one by probing the roots of the other.

Had he been only Dr. Jekyll, he would have undoubtedly achieved unparalleled greatness. Had he been only Mr. Hyde — the thought is sobering.

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On Campus with Max Shulman
(Author of "Rally Round The Flag, Boys", "The Many Loves of Dobie Gillis", etc.)

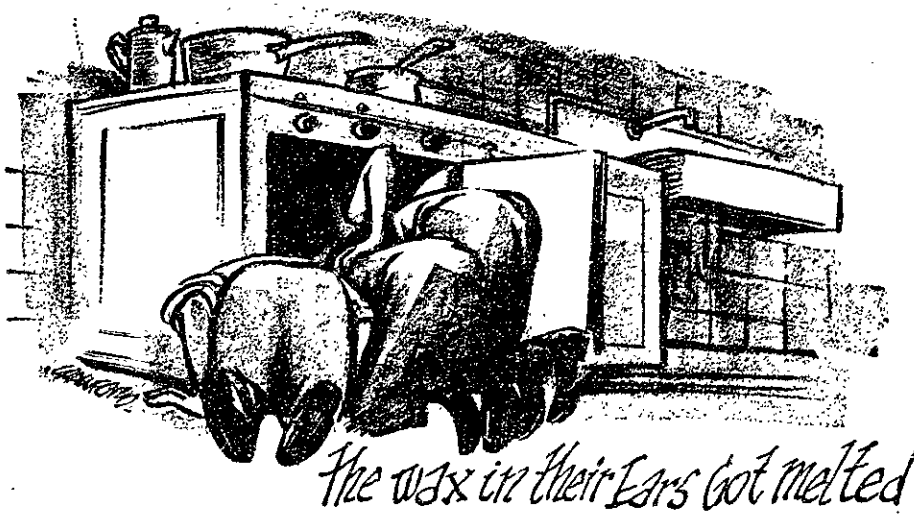
IS STUDYING NECESSARY?

Once there were three roommates and their names were Walter Pellucid, Casimir Fing, and LeRoy Holocaust and they were all taking English lit. and they were all happy, friendly, outgoing types and they all smoked Marlboro Cigarettes as you would expect from such a gregarious trio, for Marlboro is the very essence of sociability, the very spirit of amity, and very soul of concord, with its tobacco so mild and flavorful, its pack so king-size and flip-top, its filter so pure and white, and you will find when you smoke Marlboros that the world is filled with the song of birds and no man's hand is raised against you.

Each night after dinner Walter and Casimir and LeRoy went to their room and studied English lit. For three hours they sat in sombre silence and pored over their books and then, squinty and spent, they toppled onto their pallets and sobbed themselves to sleep.

This joyless situation obtained all through the first semester. Then one night they were all simultaneously struck by a marvelous idea. "We are all studying the same thing," they cried. "Why, then, should each of us study for three hours? Why not each study for one hour? It is true we will only learn one-third as much that way, but it does not matter because there are three of us and next June before the exams, we can get together and pool our knowledge!"

Oh, what rapture then fell on Walter and Casimir and LeRoy!



They flung their beanies into the air and danced a gavotte and lit thirty or forty Marlboros and ran out to pursue the pleasure which had so long, so bitterly, been missing from their lives.

Alas, they found instead a series of grisly misfortunes. Walter, alas, went searching for love and was soon going steady with a coed named Invicta Breadstuff, a handsome lass, but, alas, hopelessly addicted to bowling. Each night she bowled five hundred lines, some nights a thousand. Poor Walter's thumb was a shambles and his purse was empty, but Invicta just kept on bowling and in the end, alas, she left Walter for a pin-setter, which was a terrible thing to do to Walter, especially in this case, because the pin-setter was automatic.

Walter, of course, was far too distraught to study his English lit, but he took some comfort from the fact that his roommates were studying and they would help him before the exams. But Walter, alas, was wrong. His roommates, Casimir and LeRoy, were nature lovers and they used their free time to go for long tramps in the woods and one night, alas, they were treed by two bears, Casimir by a brown bear and LeRoy by a kodiak, and they were kept in the trees until spring set in and the bears went to Yellowstone for the tourist season.

So when the three roommates met before exams to pool their knowledge, they found they had none to pool! Well sir, they had a good long laugh about that and then rushed to the kitchen and stuck their heads in the oven. It was, however, an electric oven and the effects were, on the whole, beneficial. The wax in their ears got melted and they acquired a healthy tan and today they are married to a lovely young heiress named Gangulia Bran and live in the Canal Zone, where there are many nice boats to wave at.

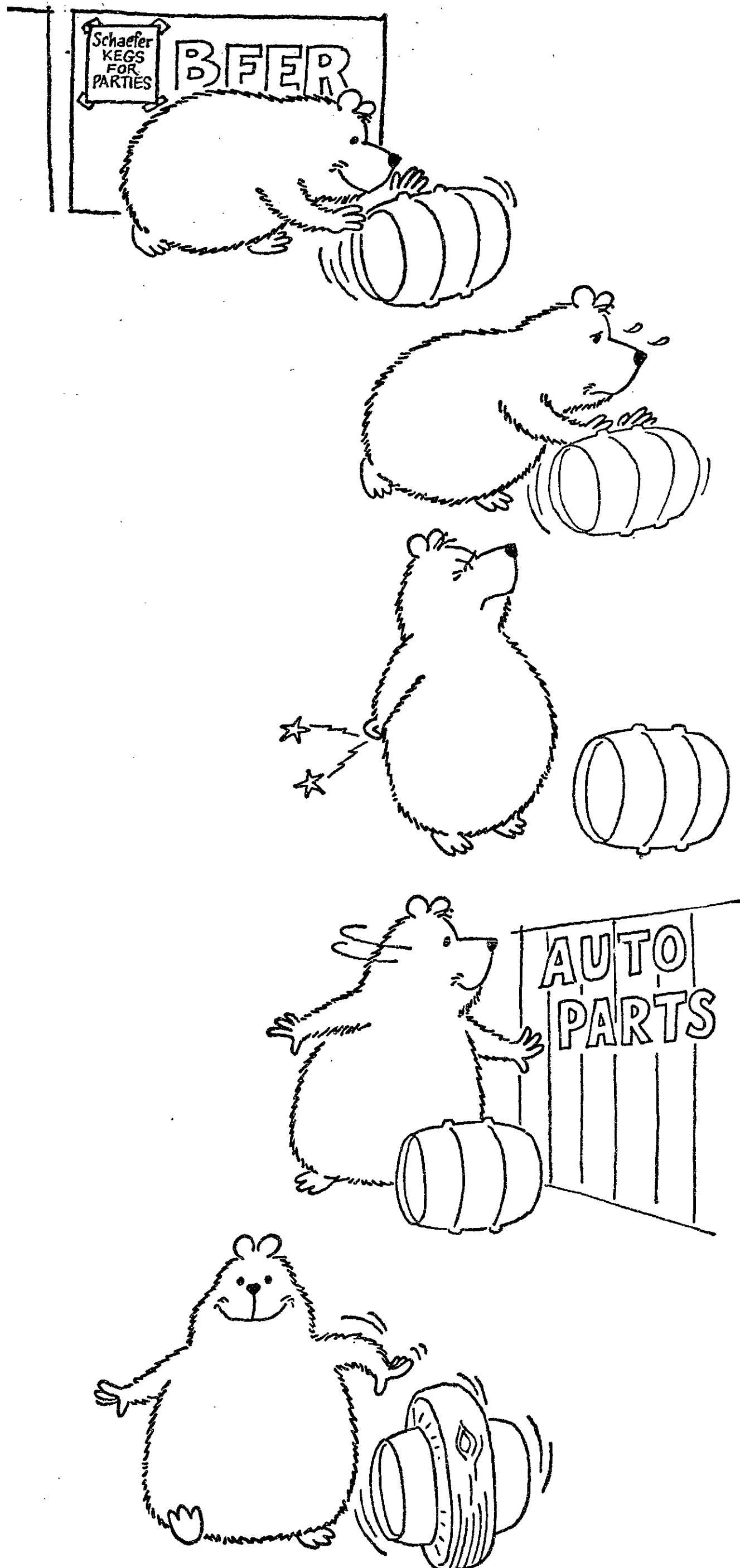
© 1962 Max Shulman

* * *

In case you worry about such things, their wife is a Marlboro smoker, too, which adds to the general merriment. Marlboro is ubiquitous, as well as flavorful, and you can buy them in all 50 states as well as the Canal Zone.

haskell

the Schaefer bear



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Entertainment-wise

'Music Man' Now At Shubert

By Tom Maugh '65
For those of you who like musicals, the smash hit "The Music Man" is currently playing at the Shubert Theater. With a very good road company, the play promises to be very intriguing entertainment.

Tomorrow night the MIT Community Players will present the Boston premier of "Eurydice," the Jean Anouilh modernization of the Orpheus legend.

Playing in the Kresge Little Theater, the first performance will be a benefit show for the WGBH rebuilding fund. There will be a special reception immediately following the performance, with WGBH members in attendance.

Reservations may be made by calling MIT, ext. 2910.

Sunday, the Isabella Stewart Gardner Museum will present a program of two trios by Saint-Saens and Schumann. The musicians will be Alfred Krips, violin, and Alfred Zighera, cello, of the Boston Symphony Orchestra, and David Barnett, piano, of Wellesley College and the New England Conservatory of Music. The concert will begin promptly at 3:00.

The Fine Arts Theater is currently (until Jan. 25) showing two modern Russian pictures. The first of them, "The Cranes Are Flying," was the Grand Prize winner at the Cannes Film Festival. The story concerns a 17-year-old Muscovite

who is in love, and stars Tatyana Samoilova in that role. The second film features the Bolshoi Ballet, perhaps one of the best in the world, in a performance of Tchaikovsky's "Swan Lake." The twin bill should provide a very interesting evening.

The MIT Hayden Gallery is currently showing a retrospective exhibition of paintings by Pierre Soulages. On view until Jan. 30, this is an all-loan exhibition which includes paintings dating from 1953.

"Critics have described Soulages' latest work in terms of its bold, dogmatic strokes or 'planks' of paint which structure the canvas space, or by its images which have the drama of hands in front of a face, concealing something mysterious." The exhibition should be worth at least a few minutes of your time as you are walking by some day.

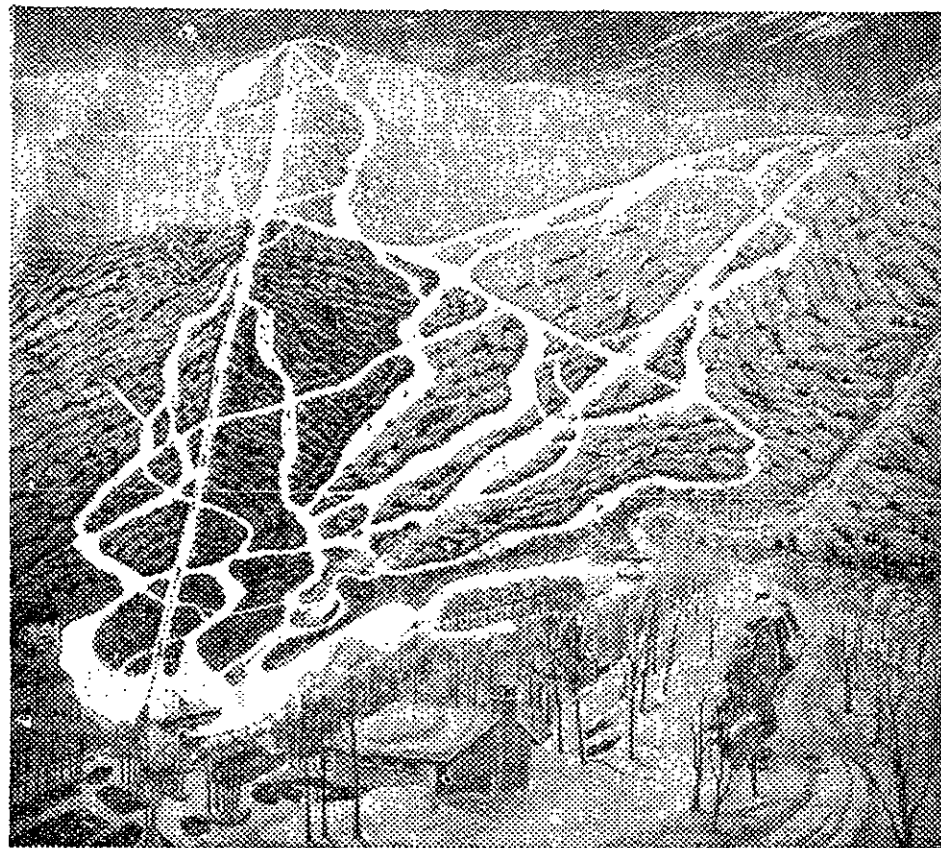
The Camerata of the Boston Museum of Fine Arts will present a concert of "Renaissance Music in Germany and Spain," on Feb. 6. The Camerata is one of the few organizations of its kind which present rarely heard music of the past on authentic instruments. The concert will be directed by Victor Mattfield, and will feature such instruments as the tromba marina, recorder, shawm, psaltery, bebec, crumhorn, and virginal. The concert will be held in the museum's lecture hall.

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Seeger Sings To Overflow Crowd In Two Hour Concert

Pete Seeger, according to Alan Lomax, "our best all round folk singer", sang in Kresge Auditorium Friday to a responsive overflow crowd that had to be seated, in part, on the Kresge stage. The concert, presented by the Junior class, lasted two hours, and, judging by the enthusiastic audience reaction to which Seeger responded with three encores, was extremely well received.



Pete Seeger

Seeger sang an enormously varied selection of songs—old English ballads, Israeli folk songs, American folk songs, and topical songs—and accompanied himself on the twelve-string guitar and the five-string banjo. His songs were interspersed with comments on how he learned them and some of their history. "Lord Randall" was sung in a new version which has little relation to the lugubrious one that is usually heard. He sang and told about a Huddie Ledbetter ("Leadbelly") song that is currently on the hit parade ("when those cotton bolls get rotten, etc.") and mentioned that it had probably been written on request at a party, out of six simple improvised couplets and "the standard American folk melody." He also sang an old spiritual and then changed the words slightly to make it apply to the current fallout shelter fad ("you can dig your grave in your own backyard").

The audience sang along with Seeger on many songs and Seeger was confident enough in the vocal capabilities of a collegiate audience to trust them with a round-song, "Sholom Chavarim" which worked surprisingly well. It was an extremely successful concert.

J. A.

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Humanities Majors Rise 1.2X In 5 Yrs.

By Terry Foster '63

Growth and development are the main topics of the 1960-1961 Report of the Dean, School of Humanities and Social Science. The report contains facts and statistics which might appear surprising to the average engineering and science-oriented Techman.

Registration in the department's subjects has increased 11 per cent since 1955-56. Dean Burchard cites the reason for this growth as many students' preferences of more than the required subjects as electives. The growth of the number of majors in the department Undergraduate majors (exclusive of freshmen) have increased from 59 in 1955-56 to 128 in the past year. Graduate majors have jumped from 52 to 114 in the same period of time.

It is felt by the dean that these increases are mainly due to the unique nature of the Course XXI program in that such an educational combination is not offered by any competitor of MIT. He also recognizes the slight decline in the undergraduate enrollment of Course XIV majors. The main reasons for this decline are cited as lack of understanding of the course's opportunities by the students, the course's concentration on education at the graduate level, and registration of many potential Course XIV students in Course XV.

Last year a new social science option for the sophomore humanities requirement was put on a trial basis. The main reason for this move, felt the dean, was the fact that the average student's program in the department consisted of three-quarters humanities courses. Burchard finds it "perplexing" that MIT's engineers, architects, and managers do not stress more of the social sciences than their present requirements of economics. He believes that the practicing engineer of the world can make more purely sociological mistakes than strictly economic mistakes.

Another significant development of the Humanities Department is the conception of Course XXIII, Modern Languages. The need for such a program was recognized by an ad hoc committee which studied the matter during the past year. One of the main topics to be dealt with by this course's fifteen allotted PhD. candidates is the translation of languages by the computer. Such a process, when perfected, will be of tremendous assistance in the translation of technical literature.

There are some questions which Dean Burchard brings up, one of which is the handling of the enrollment growth in Course XXI. This course re-

lies heavily upon instruction of small groups; it was originally planned that each class would contain only twenty-five Course XXI majors. This year's senior class was predicted to contain thirty-nine members. Burchard feels that perhaps the senior seminar will have to be divided into two sections. This seminar is a course which features eminent visiting professors of the caliber of Aldous Huxley, last year's visiting professor. The provision and endowment of perhaps two such men is a

definite problem in the future.

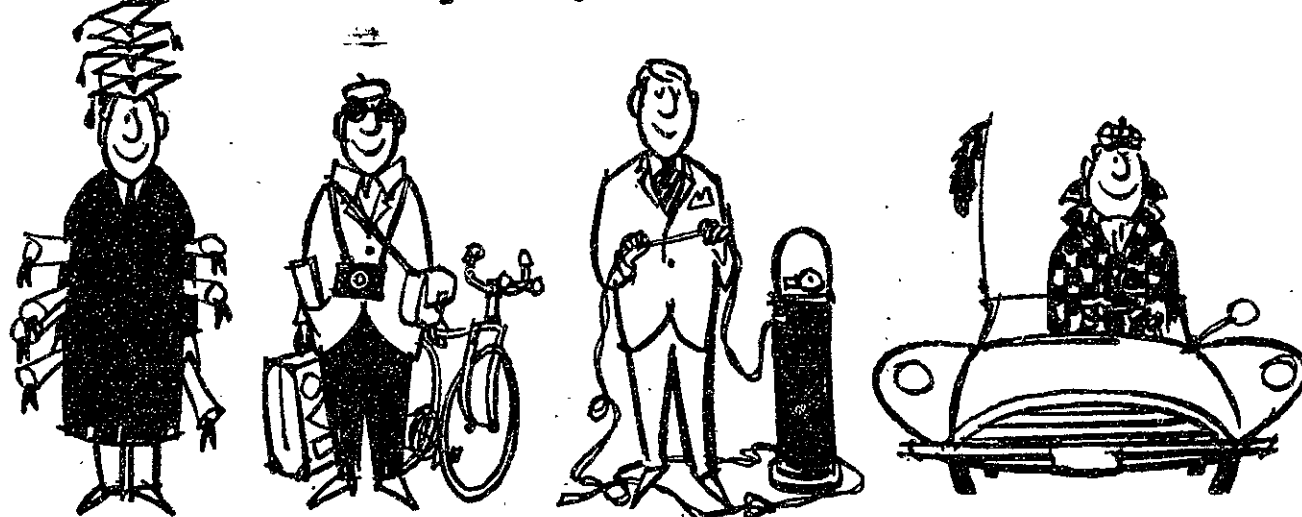
Another pertinent question is that of the provision of library resources and physical space. Burchard states that a crisis exists at this time. With the expansion of the department into new fields, such as linguistics, the existing library resources become more inadequate. The problem goes far beyond the mere lack of endowment; the procurement of new and competent library staff members is also a definite facet of the situation which cannot be solved by purely financial means. The dean also sees the space problem as serious. In addition to cramped staff space, there is presently no space provided for Course XXI undergraduates or Course XXIII graduates as there is in other courses. He feels that, unless this situation is met by the Second Century Fund, the growth of the Humanities Department will come to a stand-

still and perhaps some of the recent progress made will be lost.

Extra-curricular humanities activities also received mention in the report. Unusual expansion in the dramatic field was cited. Through their participation in the program, about 150 students provided entertainment for audiences totaling nearly 2,000. The lecture program is felt by Burchard to be quite rich in material. Another rich program is Professor Liepmann's musical series. Outstanding performers of last year's series were E. Power Biggs and Marie-Claire Alain. Other outstanding musical efforts were made by the students through the Choral Society, the Glee Club, the Symphony Orchestra, and the Brass Choir. Interesting and unusual exhibits in the Hayden Library have been provided under the direction of Professor Herbert L. Beckwith.

Check your opinions against L'M's Campus Opinion Poll '66

① How would you spend a \$5000 inheritance?



☐ more education

☐ European tour

☐ stocks

☐ sports car

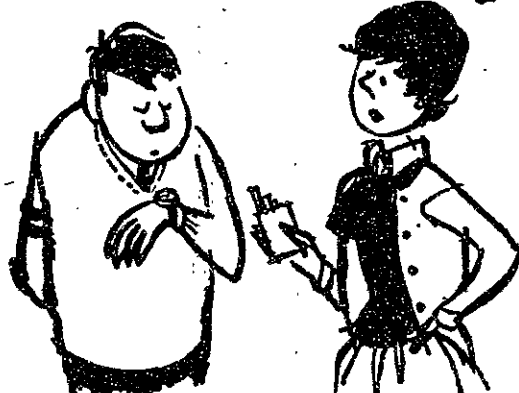
② Should the faculty have the power to censor campus newspapers?



☐ Yes

☐ No

③ What's your favorite time for smoking?



☐ during bull sessions

☐ while studying

☐ during a date

☐ anytime there's stress & strain

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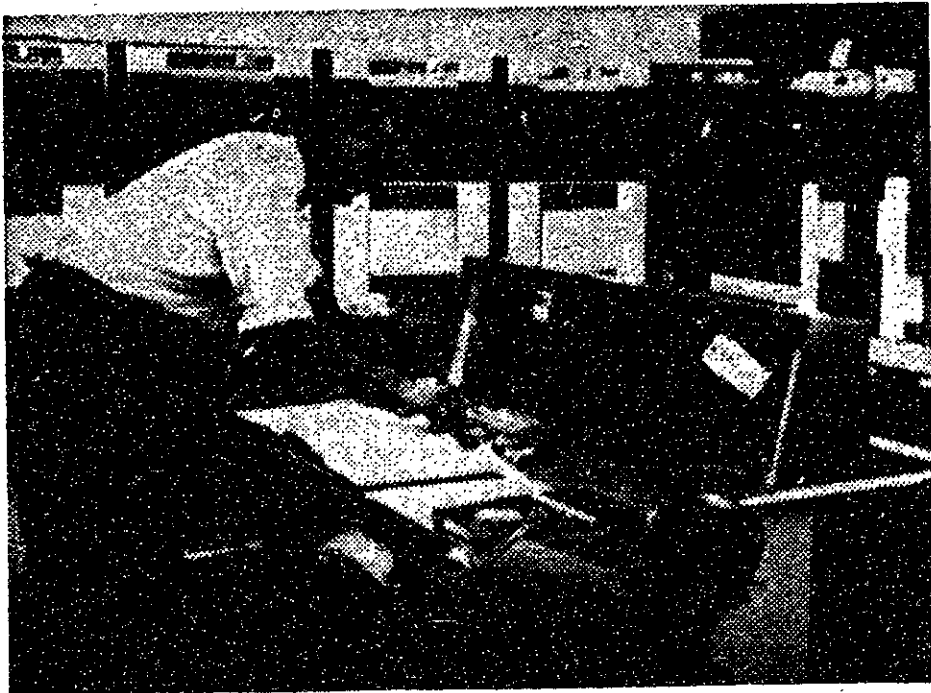


HERE'S HOW 1029 STUDENTS AT 100 COLLEGES VOTED!

stress & strain	35%
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studying	27%
bull sessions	28%
No	88%
Yes	12%
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European tour	31%
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7090 Installation Complete



Adjustments are made on the console of the IBM 7090 computer recently installed in the Computation Center.
— Photo by Conrad Grundlehner

Metallurgist

Professor Taylor Dies

Henry F. Taylor, holder of the American Brake Shoe Co. Professorship of Foundry Metallurgy, died early this week at the age of 59. Professor Taylor was a well known expert in the field of cast metals.

In 1946 he was the recipient of the Peter L. Simpson Gold Medal of the American Foun-

dryman's Society. Prof. Taylor was born in Leslie, Michigan, and was a graduate of Michigan State University. He is survived by his wife and three sons.

No Basis Found For New Rumor Of "B" Average

Contrary to certain rumors floating around the Institute, there has been no "official" decision to establish a "B-average" at MIT. According to the Office of the Registrar, the only thing that has been done, is to send a notice to instructors is to send a notice that the All Institute average is closer to B than C. This is solely to give new instructors some guidance as to grading.

No change in this policy is foreseen.

Arms Control Course Offered Next Term

A political science course on the problems of Arms Control and Foreign Policy will be offered to Tech undergraduates again this spring. The course, which last spring had the number 14.59, will be again taught by Professor Lincoln P. Bloomfield on Thursdays from 4-6, with the third hour to be announced.

The course, as before, will not be open to freshmen.

Gyroscope Utilized

(Continued from page 7)

injecting a vehicle into a perfectly circular orbit, solar radiation pressure, aerodynamic drag, bombardment by cosmic rays and meteorites, and variations in magnetic and electric field forces all would contribute to perturbations in satellite attitude.

Stabilization systems now available may not be particularly well suited for the communications satellite application, largely because of bulk, short life expectancy, complexity and large power requirements. Earlier systems have used gas reaction jets linked to attitude sensing devices; others, including some developed at MIT, rely on variable speed flywheels; and still others have been designed to use the earth's magnetic field.

In communications satellites, space and weight and power all will be at a premium.

On Deck

Tuesday, January 30
Basketball at Sir George Williams
Wrestling at Montreal YMCA

Wednesday, January 31
Basketball at Loyola
Pistol at Navy
Rifle at Navy
Wrestling at Montreal YMHA

Thursday, February 1
Basketball at McGill
Hockey at Boston College JV
Pistol at Villanova
Rifle at Villanova
Wrestling at McGill

Friday, February 2
Hockey with Fort Devens, rink, 7:00
Pistol at Merchant Marine Ac.
Rifle at Merchant Marine Ac.

Saturday, February 3
Basketball at Clarkson
Hockey with Connecticut, rink, 7:00
Pistol at Army
Rifle at Army with Buffalo & St. John's
Track in Boston A.A. meet, Boston Garden
Wrestling at Clarkson.

The Massachusetts Audubon Society says Diplodocus, the largest dinosaur, ate about 700 pounds of food a day.

750 Pin Lead

Baker A Wins Bowling

With intramural bowling now complete, Baker A has won this year's championship by a margin of nearly 15 Peterson points representing 750 pins. The statistics for the last two days of bowling are not tabulated yet, but Baker's victory is certain.

Senior house, in second place last week, dropped to third, with Burton II rising to second. Sigma Alpha Epsilon rose two places to fifth, passing both

Club Latino and Phi Kappa Theta I. Positions 2 through 6 are all closely contested.

A trophy will be given to Baker A as a team, as well as individual trophies to their top three men.

IM BOWLING STANDINGS	
Baker A	231.02
Burton II	218.14
Senior House A	218.24
Sigma Phi Epsilon A	214.56
Sigma Alpha Epsilon A	209.02
Phi Kappa Theta I	209.50
Club Latino	207.74
Burton I	204.66
Lambda Chi Alpha	203.76
NRSA A	194.64
Phi Lambda Phi	198.64

Swordsmen Edged By Strong Trinity Squad; Victorious in Foil And Sabre Competition

Last week MIT fenced at Trinity College; the final score was Trinity 15, MIT 12. Tech won both the foil and sabre divisions, each by scores of 5-4, but lost in epee by a score of 7-2. This was attributed mainly to the loss of the services of Bob Levis, '63, a consistent winner in this weapon.

Notable performances in foil were given by Ralph Zimmerman, '64, and Barry Rosof, '63.

In sabre, Al Weil, '63, was unbeaten, winning all three of his contests. Bob Mason, '63, also turned in a commendable performance.

The team record for the season is now 2 wins and 2 losses. Their next match is Friday, February 9, against Columbia. Columbia, a very strong team, is favored to win this year, although matches between these rivals are generally very close.

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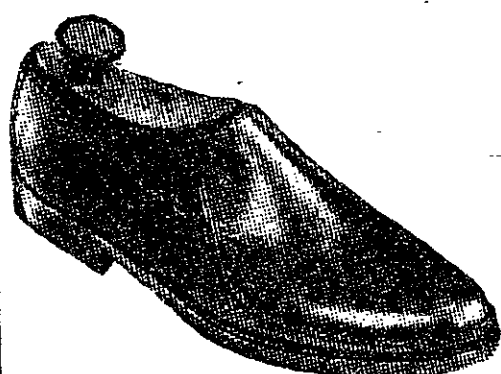
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Icemen Split Pair; Down Penn, Bow To Amherst

The Tech icemen split a pair of close games last week, defeating the University of Pennsylvania 4-1 on Saturday after losing narrowly to Amherst 4-2 on Wednesday. Both games were hard fought and evenly matched, with the breaks falling in opposite directions in the games.

The Penn game was tied at both intermissions, with MIT sinking three goals in the final period. Mike Denny '63, a Toronto boy, led the way in this victory with three goals (a "hat trick" in hockey) and an assist; Steve Levy '62 netted the other MIT score.

Denny opened the scoring midway in the first period by taking the puck from behind his own net, skating up ice, passing briefly to Capt. John Rupert '62, taking a return pass, and crossing the blue line at top speed. He swung wide around a defenseman, controlling the puck all the time, and swept across in front of the crease. As goaltender Rick Roff came out to block the shot, Denny backhanded the disc high into the upper right corner of the goal. It was one of the most spectacular plays seen in MIT hockey in many years. Late in the first period,

Penn's Jim Robbins tied it up on a fast pass play in front of the MIT net, with Robbins tipping in a rebound.

The second period went scoreless as both teams were at least one man down on penalties most of the time. Penn drew seven trips to the jail with their hard charging, mid-western brand of hockey; Techmen sat out four infractions.

With a 1-1 tie at the start of the third period, MIT quickly took a lead on a play in which a slap shot by defenseman Boje Salmon '62 rebounded to Tony Weikel '63 who flipped the puck to Denny for his second tally of the night. Later in the period Levy and Denny worked out two identical pass plays, with one carrying the puck into the corner and passing to the other stationed in front of the net.

The game was particularly significant in showing a re-

surgence of MIT's scoring power which had been missing for several games. The powerful line of Denny, Rupert and Levy seems to be operating very well.

In the Amherst battle, MIT was never ahead but tied the score late in the first period. Jack Wells of Amherst sank three shots, two unassisted. His first came on a breakaway early in the first session; MIT got this one back late in the period as defenseman Doug McMillan '62 blasted home a hard shot on a pass from Mike Denny, stationed behind the Amherst net. McMillan is the Engineers' "bad man," leading the team in penalties with 30 minutes, an average of 4½ minutes per game. Doug is also an "iron man," playing almost all the rest of the time.

The second stanza opened with another quick goal by Wells, giving Amherst a 2-1 margin. After three minutes of

play, Al Butman lifted a slap shot into the Tech net, making the score 3-1. MIT's Rupert carried in alone on a breakaway late in the period, catching the corner with a quick backhand shot.

The score stood at 3-2 for almost the entire third period; with less than two minutes remaining, MIT pulled their goalie (a conventional gamble) to give more power in the attacking zone. Unfortunately, this technique failed as Wells shot a loose puck from behind his own blue line into the empty MIT net. Several penalties immediately after this kept action to a minimum in the final minute, and the score ended 4-2.

During the semester vacation, the icers play the Boston College JV's, Fort Devens, and the University of Connecticut. The Devens and UConn games are home contests on Friday, Feb. 2, and Saturday, Feb. 3, both at 7:00.

Cindermen Fall; Frosh Win

MIT's Varsity cindermen dropped their fourth straight dual meet to Tufts College last Wednesday night, 71-42. However, encouraging performances by Tom Goddard, Bill Remsen, Gary Lukis, and Jim Flink provide Coach Art Farnham with justifiable confidence that the team will improve its record in the latter half of the season.

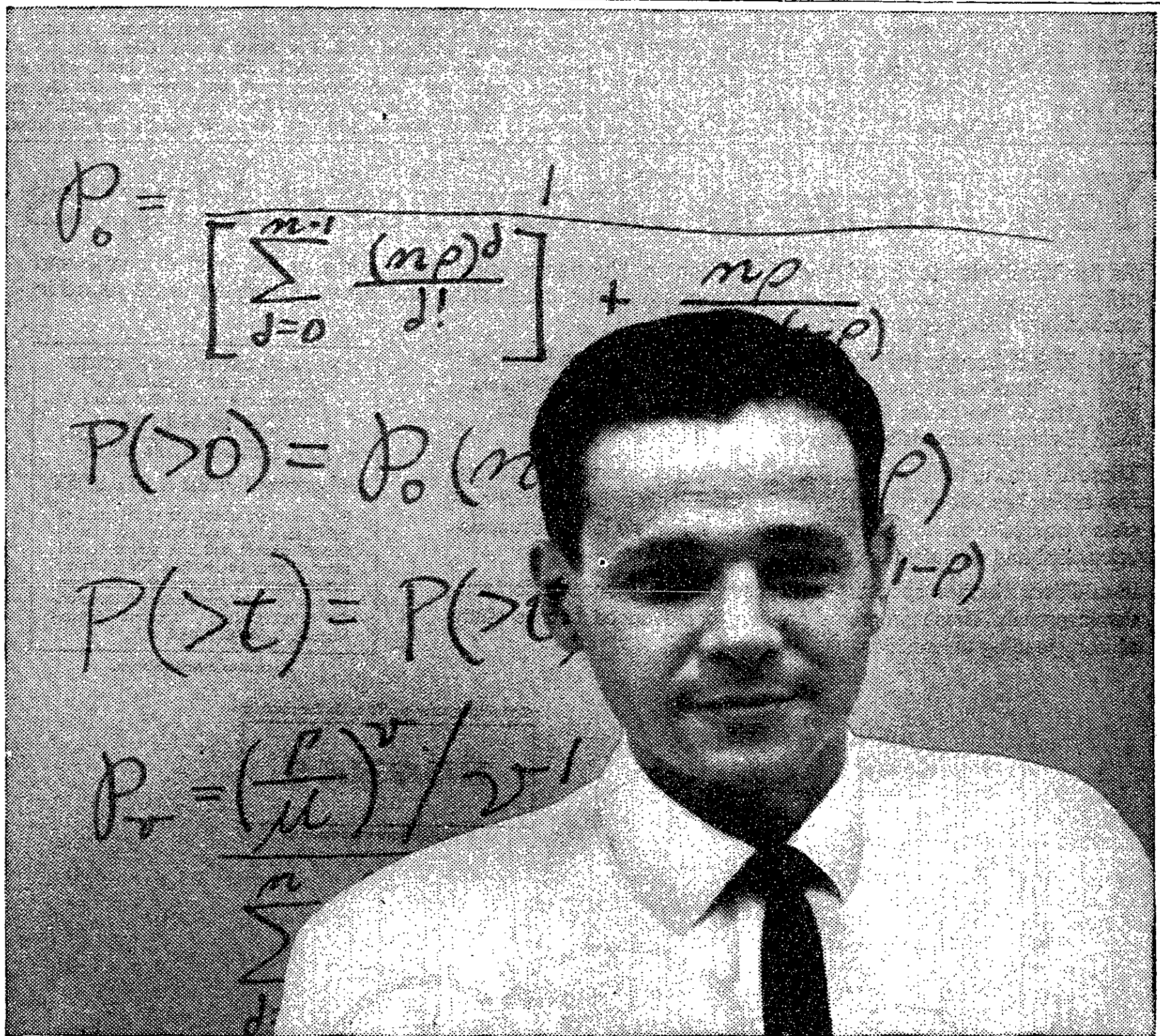
Goddard, '63, won both the 1000 yard and 1 mile run. Remsen, '64, took first in the shot put with a 43' - 6" heave. Lukis continued his good work in the pole vault by taking the event at 12' while Jim Flink showed signs of regaining his speed and form by winning both the high and low hurdles, and placing second in the dash.

Tech's Freshmen prevented a clean sweep by topping Tufts' Frosh, 66 2/5 to 46 3/5. Al Tervalon scored two firsts in the high and low hurdles. Dave Carrier continued to dominate in the broad jump, and also tied for first in the high jump with George Hadley and three Tuftsman. The pole vault was a clean sweep for MIT with Mike Riehner, Roy Wyttenbach, and Ken Morash tying for the top spot with 9' 6" efforts. Bruce Francose and Chan Stowell took first and second respectively in the 35 pound weight throw. Mike Oliver captured first in both the one and two mile runs with Bill Purves right behind him for a second place in the two mile event. John Golden made a fine comeback in winning the 1000 yard run and finishing second in the mile. Rowland Cannon was a second place winner in the 600, while Ed Hoffers took a second in the shot put.

Following this meet, a number of MIT cindermen entered the Knights of Columbus meet on Saturday, January 13th. In the afternoon at Tufts Cage, Sophomores Bill Harper and Jerry Dassel competed in the 35 pound weight event without scoring. Frosh broad jumper Dave Carrier jumped 20' 5½" to place eighth.

In the Boston Garden that evening, the Frosh mile relay finished fourth in its heat. This group was made up of Roy Wyttenbach, Rowland Cannon, George Leslie, and Terry Dorschna. Another Frosh, Al Tervalon, competed in the open

hurdle race but was unable to place. Soph. Jim Flink, competing in the hurdles and dash, reached the semifinal round in the latter event.



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IM Volleyball Rosters Due Friday, Jan. 19

Rosters and deposits for intramural volleyball are due by 5:00 on Friday, Jan. 19. Rosters and deposits for intramural badminton are due in the Athletic Association office by 4:30 today. Managers are reminded that the deposit is \$10, and rosters should be alphabetical.

Both volleyball and badminton seasons start in February and are classed as winter sports, even though their seasons extend into spring varsity sports.

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IM Hockey Season Ends Grad House Downs Fijis

Regular-season play in intramural hockey drew to a close last weekend for most teams, with the playoff berths well-settled in most cases. Grad House maintained its supremacy in major league I by downing Phi Gamma Delta, 5-2.

NRSA, after a bad start early in the season, managed to tie Theta Delta Chi 1-1, giving those two teams a second-place tie in major league II.

Sigma Chi swept the championship in minor league III with two shutout wins over Delta Upsilon and Chi Phi. Fast-rising Delta Psi tied Lambda Chi Alpha, 2-2, in a thrilling climax to league IV action. Only three games remain to be played; two of these are tonight, and none are of major consequence.

Twelve teams will enter a double-elimination playoff in February, much as it was last year. All-Sports-Trophy points will be awarded on the basis of results of the playoffs. Three teams from each major league (I and II) will participate, and two from each minor league (III, IV, V).

Seedings will give priority to

top teams in the major leagues. The schedule will be sent out during the semester vacation period.

IM HOCKEY STANDINGS

team	W	L	T
League I			
Graduate House	4	0	0
Phi Gamma Delta	3	1	0
Theta Chi	2	2	0
Phi Mu Delta	0	3	0
Senior House	0	3	0
League II			
Sigma Alpha Epsilon	3	1	0
NRSA	2	1	1
Theta Delta Chi A	2	1	1
Sigma Phi Epsilon	1	3	0
Sigma Nu	0	4	0
League III			
Sigma Chi	4	0	0
Baker House	3	1	0
Chi Phi	2	2	0
Delta Upsilon	0	3	0
Pi Lambda Phi	0	3	0
League IV			
Lambda Chi Alpha	3	0	1
Delta Psi	2	0	2
East Campus	1	1	1
Theta Delta Chi B	1	2	0
Alpha Epsilon Pi	0	4	0
League V			
Burton House	2	0	1
Tau Epsilon Phi	2	1	0
Phi Kappa Theta	0	3	0

WEEK'S RESULTS

League I	
Theta Chi 4, Phi Mu Delta 1	
Grad House 5, Fijis 2	
Fijis 4, Senior House 2	
League II	
Theta Delta Chi A 1, NRSA 1	
NRSA 3, Sigma Nu 0 (f)	
Sig Ep 3, Sigma Nu 0 (f)	
Sigma Alpha Epsilon 4, Sig Ep 1	
League III	
Sigma Chi 9, Delta Upsilon 0	
Sigma Chi 2, Chi Phi 0	
Chi Phi 7, Delta Upsilon 0	
Baker House 2, Pi Lambda Phi 1	
League IV	
Lambda Chi Alpha 2, Delta Psi 2	
Theta Delta Chi B 1, AEPI 0	
Delta Psi 7, Theta Delta Chi B 0	

9.01

Introduction To Sports Track

By Howie Ellis '65

Track is one of the oldest sports known to man. Although it has gone through many changes in its 5000 years of existence, the same common bond still unites the trackman of today with his ancient ancestor—the desire to challenge the limits of human endurance.

The sport is roughly divided into two areas, track events and field events. Track events would include such things as dashes, hurdles, and medium and long distance running. Typical of field events would be the shot put, javelin throw, high jump and pole vault.

The cinderman's season begins in late Fall, carries through the winter as he competes in indoor track meets, and ends in the Spring with outdoor track. Indoor and outdoor track are essentially the same. The only difference is that the former must take into consideration available space, while the other has no limits as such. For example, the indoor running track will be considerably shorter than its outdoor counterpart. Indoor tracks average

about 160 yards, while outdoor tracks are usually 440 yards long. Therefore, races are usually over shorter distances indoors. Also, a 180 foot weight throw, while perfectly normal in outdoor track, would present grave problems indoors. Thus, either the weight events are eliminated or the weights are made heavier so that such distances cannot be achieved.

In an outdoor track meet there are generally about 15 separate events. The running events include the 100 and 220 yard dashes, the 440 and 880 yard runs, the mile and the two mile runs. In addition there are the 220 yard low hurdles (2'6") and the 110 and 120 yard high hurdles (3'6"). The other running event is the mile relay—a race in which each of four men runs a quarter mile. The Ivy League and some other college conferences often also have a two mile relay.

Indoors the same events are run, but over shorter distances. The dashes are anywhere from 40 to 60 yards; the low hurdles

(run only in New England schools) are 45 yards; the high hurdles vary from 45 to 60 yards. The distance events, much closer to their outdoor equals, are 600 yards, 1000 yards, 1 mile, 2 miles, and the 1 mile relay.

The outdoor field events are the 16 pound hammer throw, the 16 pound shot put, the high jump, the broad jump, the pole vault, the javelin throw and the discus throw. Four of these events are also indoors. However, the javelin and discus throws are eliminated, while the 16 pound hammer throw is changed to a 35 pound weight throw.

Scoring in track meets depends on the number of teams competing. In dual meets five points are awarded to the first place man, three to the second and one to the third. In triangular meets the scoring is five points for first place, three for second, two for third and one for fourth. In case of a tie the points at stake are divided evenly between the two men. For example, if there is a tie for first place in a dual meet, each competitor receives four points—the points for first and second place divided equally. The team accumulating the most points throughout the meet is declared winner.

A better understanding of track is obtained if one has some idea of what is a "good" throw, jump or time in a race. Although these marks vary greatly throughout the country, a reasonably good college average can be obtained for a particular area and conference. In the New England area a 170' hammer throw (16 pounds) is creditable. Similarly, a 50' shot put and a 6'2" high jump will usually place. In addition, a 13' pole vault, a 22' broad jump, a 200' javelin throw, and a 150' discus throw will generally gain points. The times for running events depend so much on the track conditions that it is impossible to give any figures.

The above description just scratches the surface. The history, the strategies, the coaching for each event could fill volumes. However, a fitting conclusion for this article comes from MIT Track Coach Art Farnham: "There is a place in track for every boy and girl regardless of size, shape or innate ability. The only requirement is that one have the desire."

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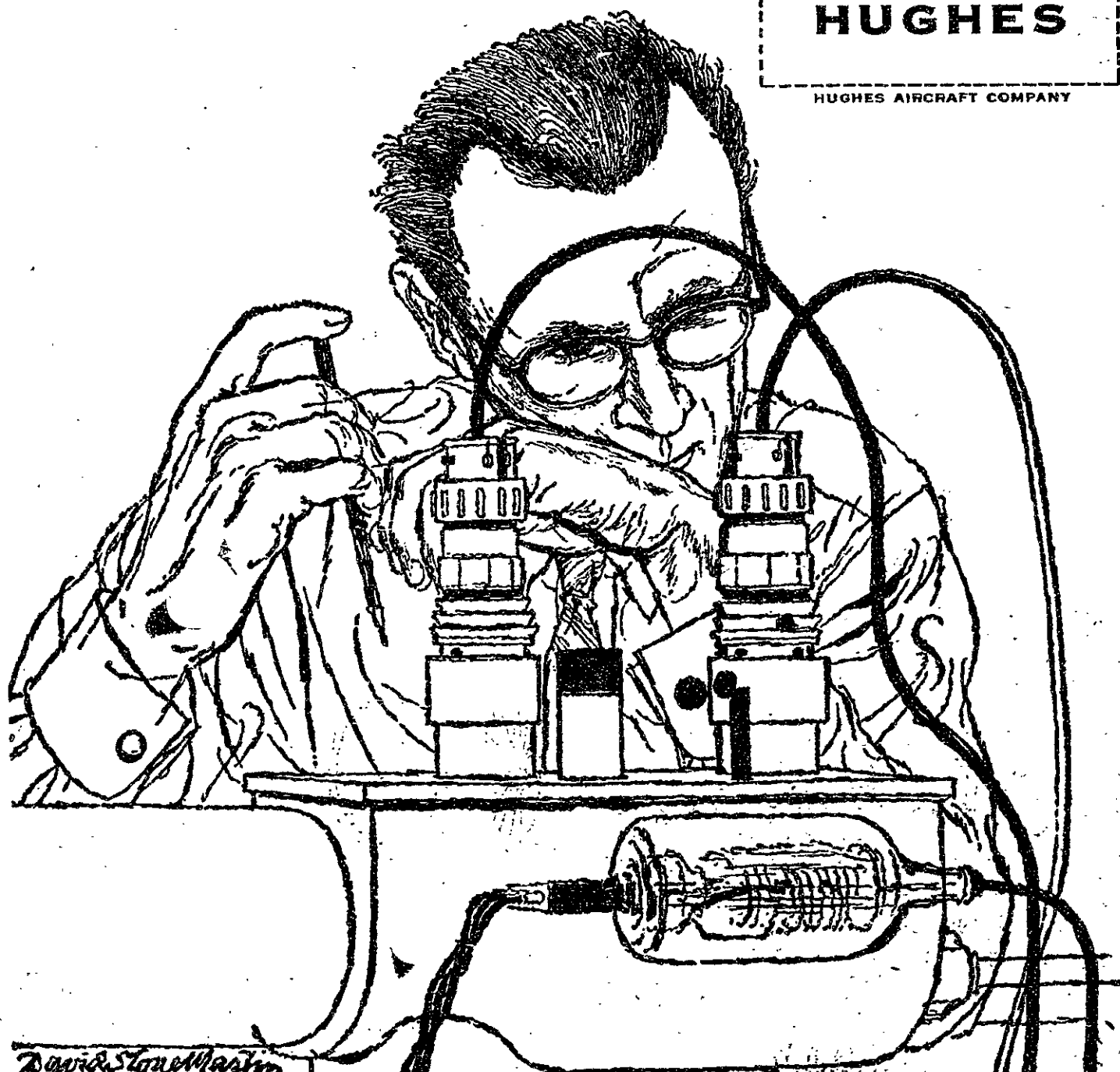
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Sharpshooters Roll; Continue Streak With Win Over Dartmouth

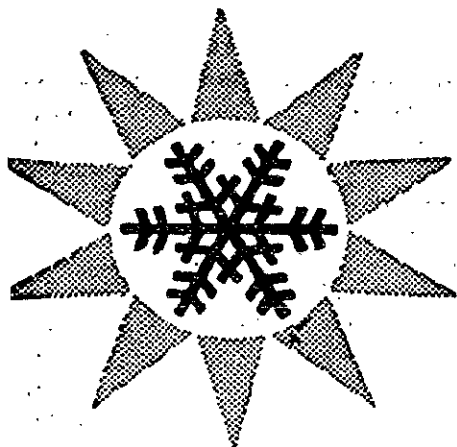
MIT's rifle team was victorious in a match with Dartmouth last Saturday in New Hampshire. This last match of the school term brings the team's season record to nine wins and one loss. The defeat was at the hands of a Vermont military college, Norwich University.

The Dartmouth trip took all day. The team got back at 1:30 a.m. These long hours kept a couple of promising shooters from going. As a result, the individual scores covered a broad range. Al Gleim '62 shot his second 289 of the season to lead the team. He was followed by Dick Ludeman '63, 286; Steve Smith '62, 283; Pete Hoffman '63, 274; and Bruce Peterson '62, 270; for a total of 1402. Dartmouth had an aggregate of 1368.

The Tech 1402 will be used as a postal match score with Princeton. Although Princeton's score hasn't been received yet, MIT is expected to have the higher score.

MIT has only four league matches left, and then the finals.

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Gross Nationals, GMS In Championship

There is no doubt that tonight's intramural basketball games will offer the Tech student his finest opportunity of the season to see four first rate teams in action. With the Intramural Championship and the Undergraduate Trophy at stake and classes over, both players and fans will be in a mood for top-flight basketball. The first game of the evening begins at 7:15 and features the top undergraduate team from each league. Burton A from the

American League and Theta Chi from the National League. The winner of the game will receive the IM Basketball Undergraduate Trophy.

In the second game of the evening, beginning at 8:45, the Graduate Management Society will play the Gross Nationals for the Intramural Championship. This game, also between teams representing the American and National Leagues, is, in addition, a battle between Course XV and Course XIV. This will be the last big game this year in intramural basketball as 3rd through 10th places have already been decided as follows:

3. Graduate House "A"
4. Burton House "A"
5. Theta Chi
6. Alpha Tau Omega "A"
7. Graduate House "B"
8. The Old Guys
9. Sigma Chi
10. Sigma Alpha Mu

The first issue next term will feature a 20-man All Star team with 10 alternates. There is a possibility that games might be arranged with the MIT Freshman and Junior Varsity teams early in the second term.

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Tech Edges UNH, 73-71 Averages Trinity Defeat

By Jay Salmon '63

Reversing a 70-60 defeat in the first game of the season, MIT's varsity basketball team felled Trinity 74-65 Saturday night in Rockwell Cage.

The Engineers featured a well-balanced attack as four starters scored in double figures. Jeff Paarz '63 pumped in 18 to lead the attack while Bill Eagleson '64, Dave Koch '62, and Chuck Gamble '62 contributing 17, 15, and 14 respectively.

The first half developed into a shooting contest between Paarz and Trinity sophomores Barry Leghorn and Daryle Uphoff. Paarz canned 12 while Uphoff had 10 and Leghorn 8. But the better balanced Engineers held the lead 32-27 at the half.

In the second half Trinity made it close as once again their 1-2 punch of Leghorn and Uphoff poured in the points. Both however fouled out late in the game and Tech went on to ice it as Eagleson caught fire for 15 second-half points.

The game was decided from the line as the cooler Tech crew sank 22 of 29 free throws while committing only 12 fouls themselves. In total, both teams scored 26 field goals.

Leghorn was the high man for the game with 20 points, followed by Uphoff with 19. The varsity has a layoff now until the mid-term break when they journey to Canada to take on Sir George Williams on January 30, Loyola on the 31st, and McGill on February 1. On the way home they stop at Clarkson for a game on the 3rd.

MIT edged the University of New Hampshire last Tuesday 73-71 in a double overtime thriller at Durham. Dave Koch '62 led the way with 30 points including 4 in the crucial second overtime.

Tech pulled out to an apparently commanding 38-27 half-time lead as Koch and Chuck Gamble '62 had the hot hand to boost the Engineers. In the second half a combination of a tough UNH press and cold shooting brought UNH the lead

60-59 at the one minute mark.

With 50 seconds left, Koch hit the first of a one-and-one situation to tie the count. A Jeff Paarz '63 shot at the horn bounced around the rim but fell off and put the game into overtime.

In the first overtime each team pumped in 7 points to knot the count again. In the frenzied finale, Paarz put Tech ahead on a jumper, 73-71, at 22 seconds and the Tech defense succeeded in tying up UNH. The first jump was abortive and on the second jump Paarz tipped the ball to Koch who killed the clock.

MIT vs. UNH (varsity)

	fg	ft	pf	pt		fg	ft	pf	pt
Paarz	4	2	1	10	Gale	3	1	2	7
Smith	0	0	1	0	Fuller	3	0	1	6
Koch	12	6	2	30	Higgins	5	0	3	10
Eagleson	4	1	1	9	Bron	6	3	3	15
Gamble	6	2	2	14	Balcom	4	3	0	11
Groninger	0	0	1	0	Messer	1	0	0	2
Burns	5	0	3	10	Leavitt	3	2	3	8
					Cote	6	0	1	12

MIT vs. Trinity (varsity)

	fg	ft	pf	pt		fg	ft	pf	pt
Koch	5	5	4	15	Leghorn	3	4	5	20
Moter	1	0	0	2	Brooks	2	1	0	5
Bloebaum	0	0	1	0	Ban'ber	1	2	1	4
Eagleson	7	3	1	17	Keen	0	2	0	2
Burns	1	6	0	8	Uphoff	8	3	5	19
Gamble	4	6	1	14	Voorhees	1	0	2	2
Paarz	8	2	1	18	McKune	1	0	1	2
					Scully	3	0	3	6
					Fenrich	2	1	4	5

Despite Don Alusic's 27 points, MIT's junior varsity fell before the UNH freshmen 63-59 in an overtime. Down 34-26 at the half, the JV's fought back to knot the tally at 53-53 at the close of regulation play.

MIT JV vs. UNH Freshmen

	fg	ft	pf	pt		fg	ft	pf	pt
Alusic	9	5	2	27	Neri	3	4	3	10
Bloebaum	3	0	1	6	Grasso	0	0	4	0
Simpson	1	1	1	3	Balt	2	2	3	6
Wyman	3	0	1	6	Bongiovanni	2	3	5	7
Moter	2	4	3	8	Zyla	3	4	0	10
Weber	0	0	2	0	Norwood	2	3	1	7
Bray	3	1	4	7	Larkin	10	3	1	23
Lips	1	0	4	2					
Dreiss	0	0	2	0					

The Tech freshmen set the tone for the varsity by dumping Trinity's yearlings 60-56 Saturday night. It was a balanced performance for Tech as Bob Grady, Frank Yin and Perry Seale all hit in double figures.

MIT vs. Trinity (Freshmen)

	fg	ft	pf	pt		fg	ft	pf	pt
Grady	4	8	8	16	Gish	6	13	11	23
Yin	6	0	0	12	Steele	5	0	0	10
McQuilken	3	6	2	8	Morisse	3	4	1	7
Morgan	3	2	2	8	Swander	6	0	0	12
Soble	3	2	2	8	Jaeger	2	1	0	4
Larson	4	6	3	11	Jarman	0	0	1	0
Elierman	0	2	1	1					

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Tech Swimmers Rip Wesleyan In 69-26 Victory

Last Wednesday evening, the MIT Swimming team swamped Wesleyan 69-26. The inspired Tech team walked away with the meet as it won eight of the eleven events.

Wesleyan didn't enter a Medley Relay so MIT's Tim Sloat '63, Dave Carey '62, Ron Matlin '63 and Joe Schrade '63 just had to swim the event. An exciting 220 yard freestyle saw Captain Jed Engeler '62 catch up to the Wesleyan swimmer at the end of the race

beating him by two body lengths. Bob Bachrach '64 took a third.

In the short 50 yard freestyle, Wayne Matson '64 was a close second and Roger Cooke '62 third. Cooke missed the first part of the season because of mononucleosis. This was his first meet and he's well on his way in regaining his form of last year which netted him a third in the New England.

Next came the 200 yard In-

dividual Medley which saw Tom Ising '62 and Lauren Sompayrac '63 take first and second respectively. Ising also won the 200 yard backstroke edging out teammate Tim Sloat. Again, Tech walked away with the diving with Bill Bails '62, and Loy Thompson '63 taking honors.

In the most exciting race of the evening, Ron Matlin '62 splashed to a first in the 100

yard Butterfly. Matlin, who got off to a bad start, forged into the lead by the last lap. He was almost caught as teammate Carey started to close his lead and was just touched out in a climactic finish.

In the 100 yard freestyle, Wayne Matson edged out Dave Stein '62, as MIT again was one-two. The grueling 440 yard freestyle was won by Wesleyan as Bob Grant '64 took a sec-

ond with Bob Bachrach pulling a very close third. In the 200 yard breaststroke Lauren Sompayrac overtook Charlie Einolf '63, the early pacesetter, to win.

Unfortunately, the freshmen did not fare as well, as they lost 50-36 to a strong Wesleyan team. Firsts were taken by Howard (200 yd. Ind. Med.), Snover (Diving), Brody (100 Butterfly) and the final relay of Howard, Blanchard, Mechura and Brody.

Squash Frightens Favored Williams, Dropped 6-3

The MIT squash team, missing Captain Monroe LaBouisse '62, frightened a heavily favored Williams team in Williams-town Massachusetts last Saturday. However, Williams rallied in the second heat of matches and won 6-3.

Matches 1, 3, 5, 7 were played first. George Meyer '62 won 3-1 at first position, Bill Mihaltsse '62 blanked his opponent at third position. Jose Alonso '62, playing fifth, won 3-2. Paul Bugl '63 lost a close 3-2 match in seventh place.

The panicked Williams players dominated the remaining

matches. Joe Rappaport '62, playing second, lost a heart-breaker by one point in the fifth game. The other matches were more or less routine victories for Williams, rounding out the final score to 6-3.

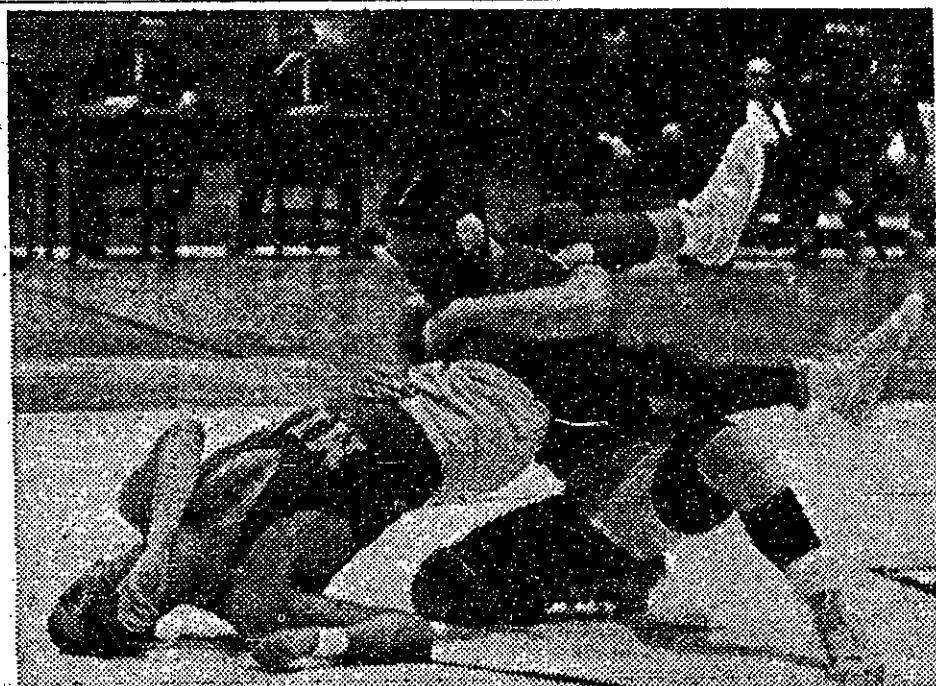
On the same trip, last Friday MIT was swamped 9-0 by a very strong Amherst squad. No MIT player in the official top nine won a game. Don Nelson '62 made the only MIT score as he lost 3-1 in tenth position.

The MIT freshman squash team lost a home match to Exeter, 5-0. Marty Snyder,

number one man, went five games.

Last Tuesday the MIT varsity played an unofficial match with the faculty; the pros took the match by a 7-2 margin. Captain Monroe LaBouisse clipped Math's Hartley Rogers Jr. in the second position battle, but George Meyer lost the top-spot match to Aero's James Mar.

The squash team will take a break for exams and vacation. The season continues second term with a home match against Princeton Friday, February 9, at 7:00 p. m.



Grapplers Defeat Brown, Evans Remains Unbeaten

By John Butler '65

MIT's varsity wrestling squad won at Brown University last Wednesday, 14-12, despite the stand-ins for Co-captain Greg Brown '62 and Tom Gernity '63, both injured.

Terry Chatwin '63, normally Brown's understudy at 147 pounds, came through with a pin in the 157-pound class. Alan Rogol '63, normally the 123-pound understudy, was able to keep from being pinned by a larger man in the 130-pound class. Jim Evans '63 remains undefeated after a 9-5 win over Don Boehm.

Paul Olmstead '62 and team Co-captain Howie Graves '62 won their matches by impressive scores, indicating that they were in continuous control of the opponent and always driving for the pin. Overall, the team scored on three decisions and one pin (Chatwin's), for a team score of 14 points.

MIT 14, Brown Univ. 12				
wt class	Name	Score	Name	Score
123	Gabrielian	0	Fish	3
130	Rogol	0	Schouldnik	15
137	Toplis	0	Messer	5
147	Evans	9	Boehm	5
157	Chatwin	WBF	Thomas	7:41
167	Olmstead	11	Westfall	2
177	Graves	14	Clauman	4
UNL	Sloat	2	Wood	9

Tech's junior varsity wrestlers won two matches last week, triumphing over Emerson College varsity 26-5 and over Brandeis 26-10. The squad demonstrated tremendous depth behind Coach Alex Sotir's winning varsity matmen.

Al Rogol, who wrestled varsity 130-pound class Wednesday, won 4-1 in the 123-pound class against Emerson. Eliot Bayly '62 tied Ray McCoy 4-4. Tom Rowe '64 pinned Charlie Bargamian in 0:35 of the second period.

Theory Chatwin drubbed the 157-pound Brian Mackes, 7-0. John Bochnovich '63 beat Warren Rhodes 10-5, also in the 157-pound class. Tom Arnold '64 pinned Joe Huff in 1:57 of the first round, again in the 157-pound class.

Emerson's Vinnie Buscomi beat out Techman Tom Neal '62; Gerson Carr '62 pinned Steve Kasden in 5:26. Because of the two-points per team for a tie, the final score was MIT 26, Emerson 5.

In the Brandeis match, Bayly beat Bob Lubinsky in the 130-class by a pin in 2:09. Rowe pinned Sam Mendler in 4:26. Bochnovich defeated Gary Markowitz in the 157-class. Neal took the 167-class by pinning Paul Kaiserman in 4:30. Carr decisioned Bruce Fields of Brandeis, 5-2.

How They Did

Basketball
MIT (V) 74, Trinity 65.
MIT (V) 73, New Hampshire 71.
New Hampshire 63, MIT (JV) 59.
MIT (F) 60, Trinity 56.

Fencing
Trinity 15, MIT 12.

Hockey
MIT (V) 4, Pennsylvania 1.
Amherst 4, MIT (V) 2.
Governor Dummer 5, MIT (F) 3.

Rifle
MIT 1402, Dartmouth 1368.

Squash
Amherst 9, MIT (V) 0.
Williams 6, MIT (V) 3.

Swimming
MIT (V) 69, Wesleyan 26.

Track
Tufts 71, MIT (V) 42.
MIT (F) 66 2/5, Tufts 46 7/5.

Wrestling
MIT (V) 14, Brown 12.
MIT (JV) 26, Emerson 5.
MIT (JV) 26, Brandeis 10.

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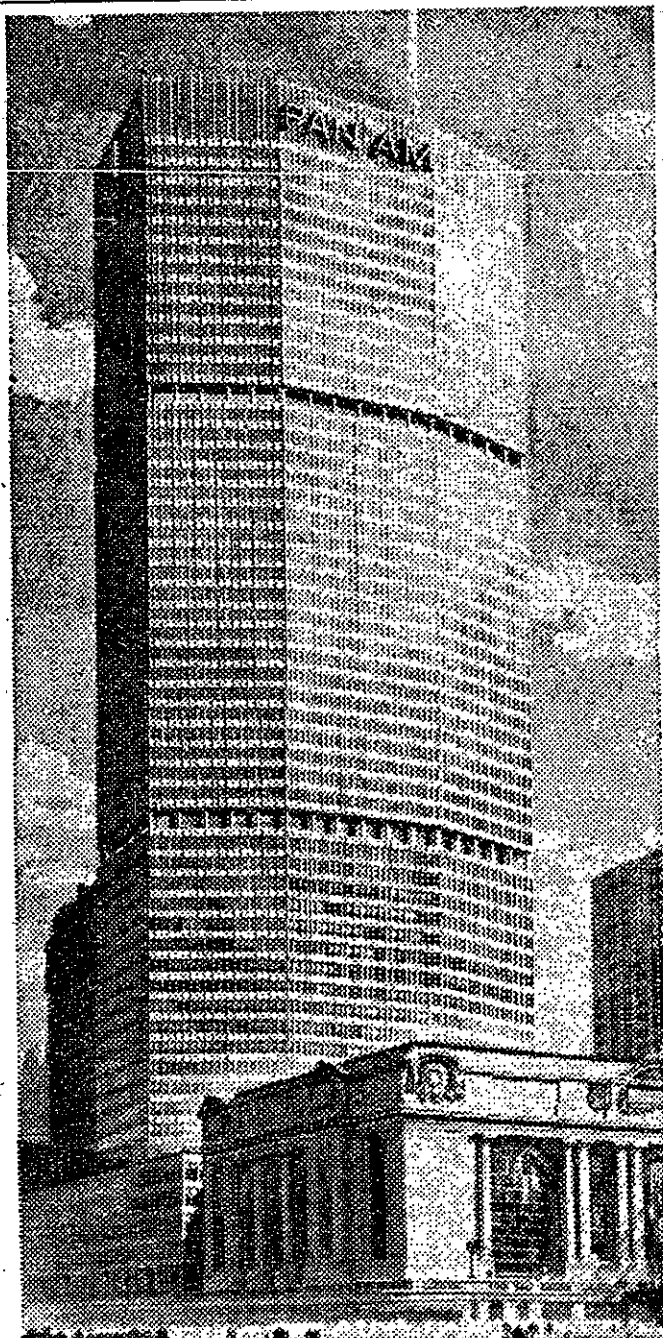
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